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OPERATOR, ORGANIZATIONAL, FIELD AND DEPOT MAINTENANCE MANUAL

I-76
I-9

TEST SET I-76

TEST OSCILLATORS

BC-376-A, -B, -C, -D, -E, -F, -G, -H, and -K

AND

TEST INDICATORS

BE-67,-A, and -C

HEADQUARTERS, DEPARTMENT OF THE ARMY
AUGUST 1962

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TECHNICAL MANUAL)
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HEADQUARTERS,
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WASHINGTON 25, D.C., 10 August 1962

OPERATOR, ORGANIZATIONAL, FIELD, AND DEPOT MAINTENANCE MANUAL TEST SET I-76, TEST OSCILLATORS BC-376-A, -B, -C, -D, -E, -F, -G, -H, AND -K AND TEST INDICATORS BE-67, -A, AND -C

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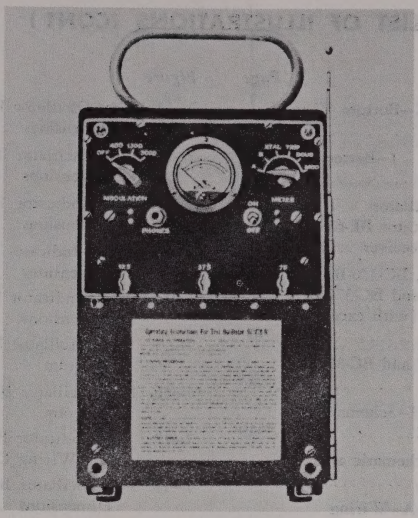


Figure 1-1. Test Oscillator BC-376-H

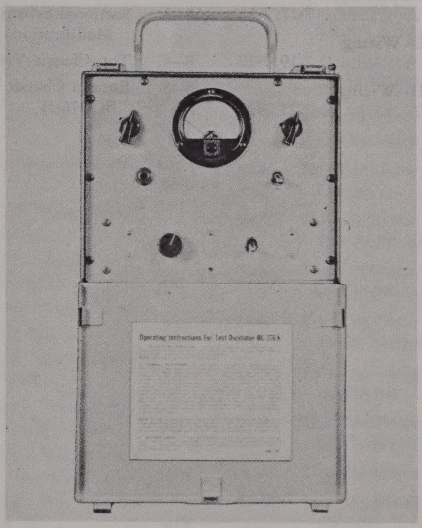


Figure 1-1A. Test Oscillator BC-376-K

SECTION I
GENERAL DESCRIPTION

1. GENERAL.

a. Test Set I-76 consists of Test Oscillator BC-376-( )* and Test Indicator BE-67-( )**.

b. Test Oscillator BC-376-( ) (see figures 1—1 and 1—1A) is ground equipment used in conjunction with Test Indicator BE-67-( ) for adjustment and tuning of marker beacon receivers and transmitter. This equipment is a portable, low-power, high-frequency oscillator, with self-contained power supply. Operating on a crystal controlled frequency of 75 megacycles, either modulated or unmodulated, its effective operating range is approximately 20 feet.

c. Test Indicator BE-67-( ) (see figures 1—2, 1—2A, and 1—2B), used with the test oscillator, consists of a milliammeter, potentiometer, and two batteries. It is used as an output meter for tuning marker beacon receivers, and to supply direct current to the relay for relay adjustment. It is listed in paragraph 3, this section.

* Any reference to Test Oscillator BC-376-( ) in this handbook will refer to Test Oscillators BC-376A-, -B, -C, -D, -E, -F, -G, -H, and -K unless specifically noted.

** Any reference to Test Indicator BE-67-( ) in this handbook will refer to Test Indicator BE-67, BE-67-A, and BE-67-C. The units are similar electrically and mechanically, but differ as to reference symbols used for components.

2. EQUIPMENT SUPPLIED.

The table below lists equipment supplied with Test Set I-76.

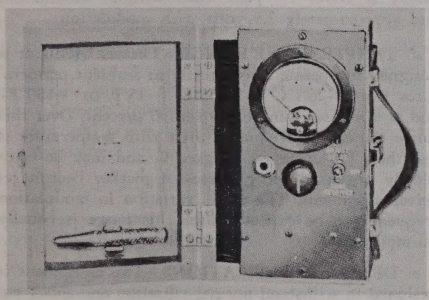


Figure 1-2. Test Indicator BE-67 Exterior View with Cover Open

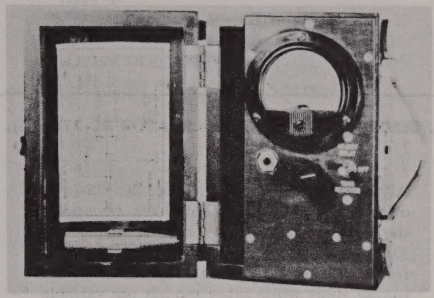


Figure 1-2A. Test Indicator BE-67-A Exterior View With Cover Open

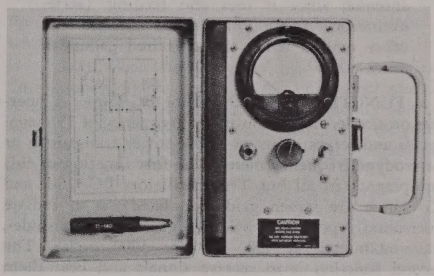


Figure 1-2B. Test Indicator BE-67-C Exterior View with Cover Open

Quantity per Equipment	*Name of Unit*	*Army Type Designation*	*Navy Type Designation*	*Overall Dimensions (inches)*	*Weight (Pounds)*
1	Test Oscillator including complete tube complement	BC-376-( )		†	†
1	Test Indicator	BE-67-( )		†	†

† The various production models differ in dimensions and weight. Test Oscillator BC-376-E is 21.5 pounds and 9-3/16" x 12-5/16" x 7¾"; while Test Oscillator BC-376-H is 17.75 pounds and 8-9/16" x 13¾" x 7¾". Test Oscillator BC-376-A, -B, -C, and -E are similar electrically, and mechanically. Test Oscillator BC-376-F and -G are similar electrically and mechanically. Test Oscillator BC-376-K is 20.25 lbs. and 9¼" x 15⅝" x 7-13/16". Test Indicator BE-67 measures 7⅞" x 5⅛" x 5-15/16", BE-67-A is 7⅞" x 5¼" x 6", BE-67C is 8-3/32" x 5-5/32" x 6⅜". All models of the Test Indicator weigh approximately 3 lbs. less batteries.

3. EQUIPMENT REQUIRED BUT NOT SUPPLIED.

The following equipments are required but not supplied with Test Set I-76.

Quantity Per Equipment	*Name of Unit*	*Army Type Designation*	*Navy Type Designation*	*Required Characteristics*
2	Battery	BA-36		45 volts.
1	Battery	B-35		1.5 volts.
2	Battery	BA-31		4.5 volts.
1	Cord	CD-316 or CD-316A		Length 36". Two Plugs PL-55.
1	Cord	CD-307 or CD-307-A		Length 48". One Plug PL-55 and one Jack JK-26.
1	Headset	H-4/AR, HS-23, or equal		High-impedance for use with Adapter MC-385-B.
1	Headset Adapter	MC-385-B		To match a high-impedance output to a low-impedance headset.
1	Screw driver			Small bit for inserting in capacitor slots.

4. DESCRIPTION OF TEST OSCILLATOR BC-376-( ).

Note

All models of Test Oscillator BC-376-( ) discussed in this handbook have essentially the same characteristics. Test Oscillators BC-376-H and -K differ in the modulator stage from other models, since they use iron-core tuning slugs while other models use variable capacitors for tuning. Test Oscillator BC-376-K differs in the method of coupling to the antenna, since it uses end feeding (series excitation) to an ungrounded antenna. All other models use a shunt excited grounded antenna.

a. FUNCTION.—Test Oscillator BC-376-( ) operates on single, crystal-controlled frequency of 75 megacycles and serves either as a low-power transmitter or heterodyne frequency meter. The first function of this equipment (in all but Test Oscillators BC-376-F and -G which are screen grid modulated) is to radiate horizontally polarized waves, high-level-, amplitude-, plate-modulated at 400, 1300 or 3000 cycles. The second function is to receive signals and beat them with the local oscillator frequency, thereby giving aural indication of the tuning of equipment such as the Marker Beacon Projector A-1 and Marker Beacon Transmitter BC-302. It is usually operated with the equipment of Test Set I-76 of which it is a component unit.

b. OPERATING RANGE.—The effective operating range of Test Oscillator BC-376-( ) is between 10 and 20 feet, with the transmitting and receiving antennas parallel. Field strength may be decreased by shortening the telescoping antenna. The field strength at 100 feet from the test oscillator is approximately 900 microvolts per meter, when both the oscillator and field strength meter antennas are parallel and mutually perpendicular to the 100-foot line between their centers.

c. RADIO-FREQUENCY OUTPUT.—The r-f output, measured with a vacuum tube voltmeter (Hickok model 202, or equal), (with one probe in contact with the base of the antenna near the case, the other probe at a screw supporting the antenna socket cover plate) is about 1.5 peak volts without modulation and approximately 2.5 volts with modulation.

d. TEMPERATURE RANGE.—The test oscillator is designed to operate satisfactorily in ambient temperatures from −26.1°C to +55°C (−15°F to +130°F) and at a relative humidity up to 90 percent. Over this range the carrier frequency drift with temperature is less than 150 cycles per degree C, and may be completely neglected for purposes of marker beacon receiver alignment. The ±2% variation in modulation frequency to be expected over this range is equally unimportant.

e. DESIGN SPECIFICATIONS.—The equipment is designed to withstand normal vibration and shock encountered in transportation under reasonable road and travel conditions. It may be operated for a short time in light rain or snow provided the panel cover is kept closed as shown in figure 2—1 and 2—1A.

f. POWER SUPPLY.—Power is supplied entirely by one Battery BA-35 and two each Battery BA-36. The life expectancy of these batteries is between 25 and 50 hours. With modulation on, and proper tuning, the approximate voltages and currents drawn by the oscillator are 0.25 ampere at 1.5 volts for filaments, and 27 milliamperes at 90 volts for plates and screens.

5. DESCRIPTION OF TEST INDICATOR BC-67-( ).

See section V.

* The stability of the audio stage of Test Oscillator BC-376-H and -K is greater than that stage in other models, with respect to temperature variations, battery condition variations, and tube variations.

SECTION II
OPERATION AND ADJUSTMENT

1. UNPACKING THE EQUIPMENT.

Check to determine that all the items listed in paragraph 3, section I, are available. The oscillator is packed without batteries installed. The crystal will be found protected in its socket. Clean all parts thoroughly before assembling.

2. PREPARATION FOR USE.

a. GENERAL.—First remove the cover of the battery compartment, then the screws which hold the chassis and panel to the case, and take the chassis from the cabinet. Remove the crystal shipping retainer. Insert the crystal and tubes firmly into their respective sockets, as marked on the chassis. See that the transmission line plug leading to the antenna socket is properly in place. Earlier models of the test oscillator have a battery cable plug which must mesh correctly in its socket. (See figure 5-3.)

b. BATTERY INSTALLATION.—Batteries are connected to cables according to the end-markings and installed in the cabinet according to figure 7-1.

c. ANTENNA INSTALLATION.—The antenna of Test Oscillator BC-376-( ), when not in use, is telescoped and carried in a socket mounted on the side of the case. For operation, insert the antenna horizontally through a hole in the side of the case into a socket which connects to the output stage through a short transmission line, and extend the antenna fully. (See figure 2-1 and figure 2-1A.)

d. PRE-OPERATION TESTS.

(1) After tubes and batteries have been installed, turn the ON-OFF battery toggle switch to the ON position and the METER selector switch to A and B positions and observe readings on the meter. New batteries should read approximately 1.45 volts in the A position and 90 volts in the B position. This indicates voltages supplied to the tubes and crystal. (See figure 2-2 and figure 2-2A.)

Note

Panel markings of various models are not uniform. METER switch markings on Test Oscillator BC-376-E, BC-376-C, BC-376-H, and BC-376-K are as follows:

BC-376-E—"A—B—XTAL—TRP—DBL—MOD."

BC-376-G—"A—B—XTAL—TRP—DBL—MOD."

BC-376-H—"A—B—XTAL—TRIP—DOUB—MOD."

BC-376-K—"A—B—XTAL—TRIP—DOUB—MOD."

(2) (*a*) Continue turning the METER switch in a clockwise direction to XTL—TRP—DBL—MOD positions. Plate and screen current drawn will vary with the model, tubes used, and battery condition. Refer to tables in section IV.

(*b*) When making meter readings on the Test Oscillator BC-376-K, the AUX. METER switch must be in the NORM position. After checking battery voltages and plate and screen currents, the AUX. METER switch should be set to the RF position to obtain an indication of RF output.

e. TUNING THE TEST OSCILLATOR BC-376-K. Accurate tuning of the circuits is easily accomplished

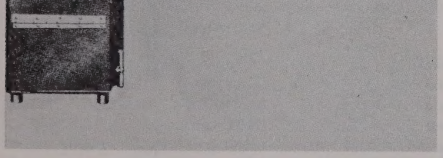


Figure 2-1. Test Oscillator BC-376-H—Panel Cover Closed, Antenna Extended

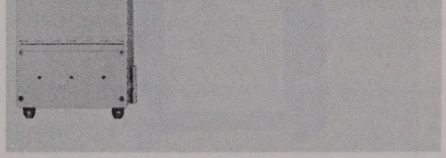


Figure 2-1A. Test Oscillator BC-376-K—Panel Cover Closed, Antenna Extended

as follows:

1. Insert the antenna into the radiator socket, extend antenna full length.

2. Set the BATTERY switch to ON.

3. Set the METER switch to XTAL.

4. Turn the RF LEVEL control fully clockwise.

5. Set the AUX. METER switch to NORM.

6. Adjust the capacitor marked CRYSTAL — 12.5 until a sharp dip in plate current is indicated on the front panel meter. Record the meter reading. For normal plate current refer to table 4-2.

7. Tune the capacitor marked CRYSTAL — 12.5 off resonance on the broad tuning side until the meter reads approximately 0.5 milliampere greater than the value recorded in step 6., section II, paragraph 2.*e.*

Note

The meter reading increases gradually when tuning on the proper side of resonance, and increases sharply when tuning on the other side.

8. Set the AUX. METER switch to RF.

9. Tune the capacitors marked TRIPLER—37.5 and DOUBLER—75 for a maximum reading on the front panel meter.

10. Adjust the RF LEVEL control until the front panel meter reads exactly at mid scale.

Note

If mid-scale reading of RF LEVEL cannot be obtained, check the condition of the batteries. The front panel meter should not read below 1.3 volts when the METER switch is set to position A and the AUX. METER switch is set to NORM; and with the METER switch set to position B, the front panel meter should not read below 70 volts. Replace batteries if minimum voltage readings are not obtained.

11. Set the POWER switch to OFF.

f. TUNING THE BC-376-( ) TEST OSCILLATOR OTHER THAN BC-376-K.

1. Perform steps *1, 2, 3, 6,* and 7 of section II paragraph 2.*e.* This completes tuning of CRYSTAL STAGE.

2. Turn METER switch to DBL position. Tune capacitor marked TRIPLER—37.5 until a point of maximum current is observed on the meter. There may be as much as 1.0 milliampere deflection, making the maximum point easily determinable.

3. An alternate method of tripler tuning is to turn the METER switch to TRP position, and tune the capacitor marked TRIPLER—37.5 until a slight decrease in plate current is obtained. Use care in observing the dip as the decrease in plate current may be 0.2 milliampere or less. Normal plate current for this stage is about 5 to 8 milliamperes. Refer to table 4-2.

4. Turn METER switch to DBL position. Tune capacitor marked DOUBLER—75 until a slight dip in plate current is obtained. This decrease may be less than 0.2 milliampere. Normal plate current for this stage is about 3.5 to 6.5 milliamperes. Refer to table 4-2. In this operation, since the dip is so slight, it is advisable to check the r-f output at the antenna as described in section IV, paragraph 2.*g.*, since lack of dip may indicate a faulty tube.

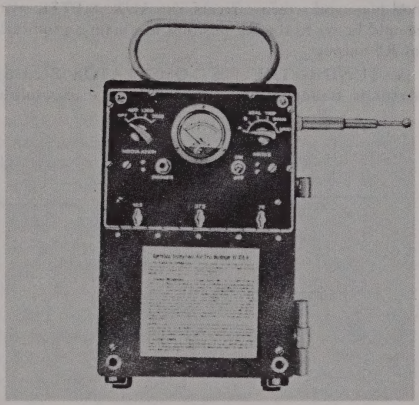


Figure 2-2. Test Oscillator BC-376-H— Panel Cover Open, Antenna Collapsed

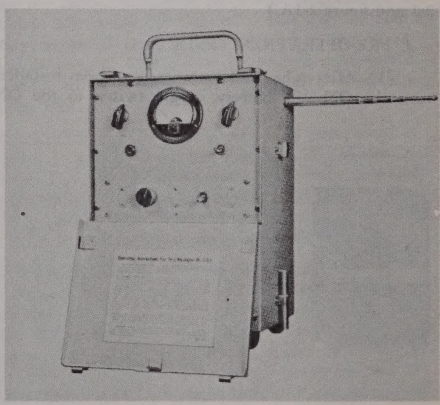


Figure 2-2A. Test Oscillator BC-376-K— Panel Cover Open, Antenna Collapsed

3. STARTING AND STOPPING EQUIPMENT.

a. To start equipment, throw ON—OFF toggle switch to ON. Note that the METER switch does not affect operation.

b. To stop operation, throw the ON—OFF toggle switch to OFF.

4. USING THE TEST OSCILLATOR BC-376-( ) AS AN OSCILLATOR.

a. Place the test oscillator on the ground with its antenna extended parallel to, and from 10 to 20 feet away from, the marker beacon receiving antenna. (See figure 7-2.) Turn the MODULATION switch to the 3000-cycle position. Connect Test Indicator BE-67-( ) to the receiver and observe the meter, leaving the switch on the TUNE RECEIVER position. If the receiver and oscillator are turned on and properly tuned, the meter should indicate.

b. Tune the receiver for about a half-scale deflection of the meter of Test Indicator BE-67-( ). A full-scale or off-scale deflection indicates overloading of the marker beacon receiver, and inaccuracies may result. Should the indication be off scale, this deflection may be decreased by decreasing the length of the oscillator antenna. If the deflection is too small, move the oscillator closer to the receiver. Should it be impossible to obtain a deflection of 0.3 to 0.5 milliampere under any conditions, other equipment should be tried. If there is insufficient oscillator output, refer to section IV, paragraph 2.

5. USING THE TEST OSCILLATOR BC-376-( ) AS A HETERODYNE FREQUENCY METER.

a. Place Test Oscillator BC-376-( ) at a distance of 3 to 10 feet from the transmitter. Install and extend the antenna, turning the battery switch to the ON position and the MODULATION switch to the OFF position.

b. Insert Headset HS-23 or its equivalent in the jack marked PHONES. Place the marker beacon transmitter in normal operating condition, with the top cover removed, and tune with a suitably insulated screw driver until a beat note is heard. When the top cover plate is brought to its proper position, the beat note will change frequency and finally disappear. This frequency change is caused by the addition of the capacity of the cover to the transmitter's tuned circuit. With some pratice the operator will find it possible to decrease the capacitance below resonance value so that the beat note will be heard when the cover is replaced. This condition indicates proper tuning. Since a strong signal will tune broadly, a more accurate adjustment is possible when the signal heard in the earphones is not too loud. To decrease the signal, reduce the length of the oscillator antenna. Take precautions against high voltage during this operation, if adjustments are made inside the transmitter.

SECTION III
THEORY OF OPERATION

1. GENERAL.

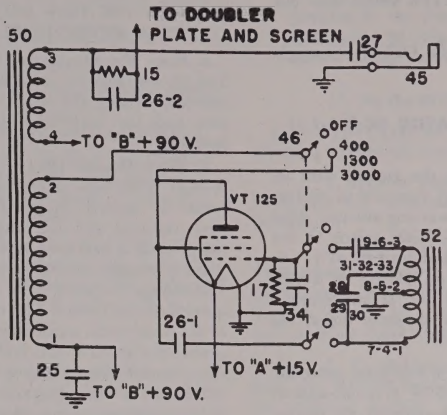
a. Test Oscillator BC-376-( ) is a single unit, self-contained, low-power, crystal-controlled oscillator, provided expressly for tuning marker beacon equipment.

b. The circuit has three r-f stages and an audio stage. The r-f stages are: crystal oscillator stage, tripler stage, and doubler stage. The crystal oscillator, operating at 12.5 megacycles, excites a frequency tripler stage whose output is 37.5 megacycles, which drives the final doubler stage. The r-f output of 75 megacycles may be modulated at 400, 1300 or 3000 cycles.

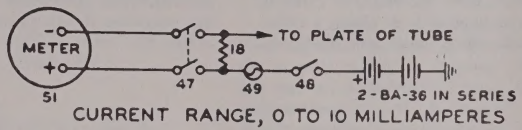
c. Meter circuits (see figures 3-1 and 3-1A) provide a quick check on the battery voltage as well as the output of each plate circuit in milliamperes. The total resistance of the meter is 135 ohms. This is the resistance of the meter, plus a compensating series resistor which is shown in the schematic drawing of Test Oscillator BC-376-A as resistor 19. (See figure 7-3.) Other schematics do not show this resistor as an external component of the meter.

d. Test Oscillator BC-376-K is designed to use the front panel meter to measure the RF signal level at the output of the doubler stage. The output of the RF filter (C-120, C-121, L-104) is connected to the positive terminal of the meter (M-101) when AUXILIARY METER switch (S-102) is in the RF position. (See figure 3-1A.) The negative terminal of M-101 is simultaneously returned to ground. Thus the front panel meter is inserted in series with the IN34 crystal diode (CR-101) rectifier and the associated RF filter and indicates the rectified average value of the carrier. This application of the front panel meter enables the operator to establish a standard RF signal output from the BC-376-K Test Oscillator for all tests.

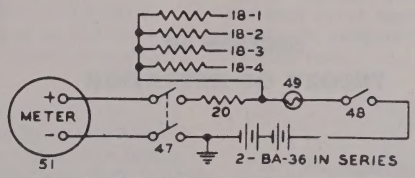
e. The RF LEVEL potentiometer (R-103) is added to the circuit in series with the B+ supply voltage for all stages. (See figure 3-1A.) A change in position of the RF LEVEL control changes the value of B supply voltages to all stages. Thus the gain of each stage, and the RF signal output level of the TEST OSCILLATOR BC-376-K is controlled. The voltage available from a



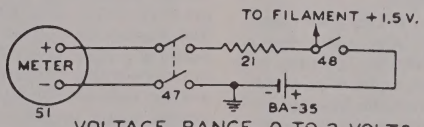
FUNCTIONAL DIAGRAM – MODULATOR CIRCUIT



CURRENT RANGE, 0 TO 10 MILLIAMPERES



VOLTAGE RANGE, 0 TO 100 VOLTS



VOLTAGE RANGE, 0 TO 2 VOLTS

FUNCTIONAL DIAGRAMS - METER CIRCUITS

NOTE: Reference numbers are those used on schematic diagram of test oscillator BC-376-H shown in Fig. 7-5 and table of parts.

Figure 3-1. Test Oscillator BC-376-H—Fundamental Circuits of Audio Frequency Meter

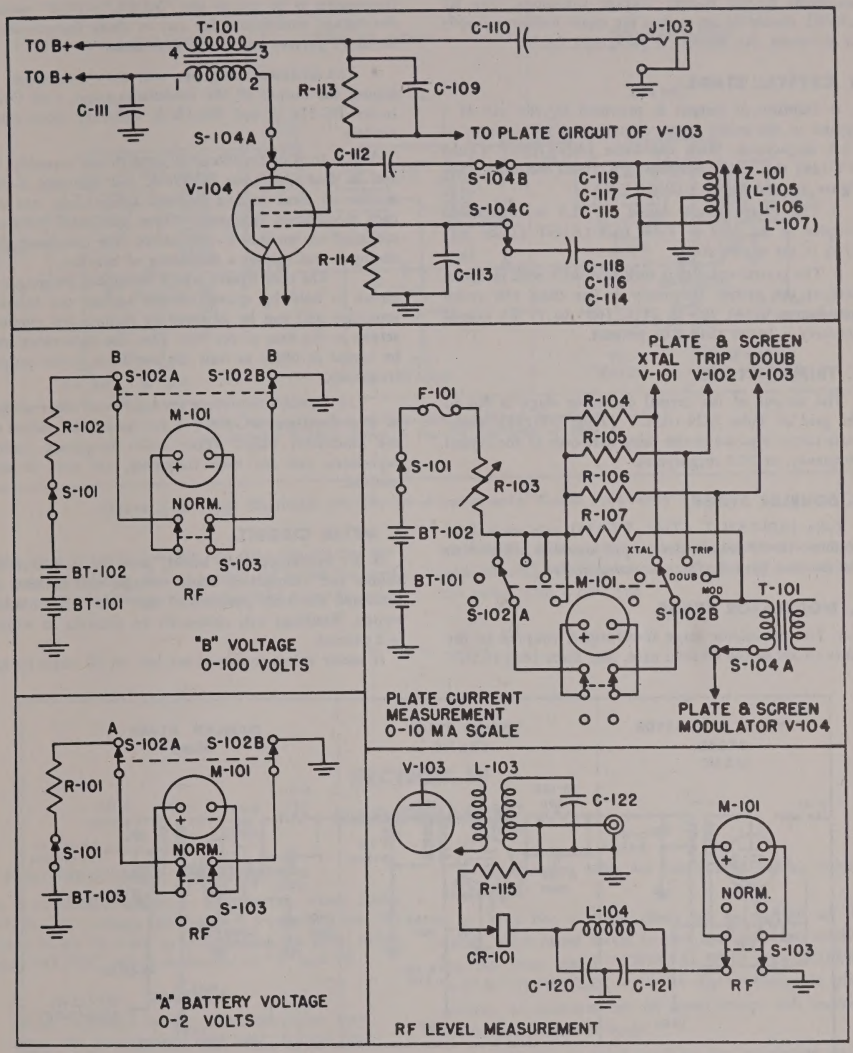


Figure 3-1A. Test Oscillator BC-376-K—Fundamental Modulator and Meter Circuits

given battery changes with time; the RF LEVEL control makes it possible to establish "On the line" testing standards despite battery voltage variations. The RF LEVEL should be set so that the meter indicates exactly at mid-scale. See Section II paragraph *2.e.10.*

2. CRYSTAL STAGE.

a. Stability of output is provided by the use of a crystal in the initial stage, operating at a frequency of 12.5 megacycles. With the Tube JAN-1A5GT (Tube VT-124) this circuit operates as a crystal oscillator. (See figure 3-2 and figure 3-1B.)

b. The plate circuit, tuned to 12.5 is inductively coupled to the grid of Tube JAN-1A5GT (Tube VT-124) in the tripler stage.

c. The crystal stability is such that drift with temperature at the carrier frequency is less than 150 cycles per degree C. At 20° to 25°C (68° to 77°F) crystal accuracy is better than 0.01 percent.

3. TRIPLER STAGE.

The output of the crystal oscillator stage is fed to the grid of Tube JAN-1A5GT (Tube VT-124) whose plate circut is tuned to the third harmonic of the crystal frequency, or 37.5 megacycles.

4. DOUBLER STAGE.

Tube JAN-1A5GT (Tube VT-124) acts as a final doubler. Its 75 megacycles output signal is coupled to the antenna by a flexible transmission line.

5. MODULATOR STAGE.

a. The modulator stage transformer, coupled to the plate circuit of the doubler tube, uses Tube JAN-1C5GT (Tube VT-125). The three modulation frequencies are: 400, 1300, and 3000 cycles. Selection of either of these frequencies is by use of the "MODULATOR" switch. Percentage modulation for any of these frequencies is about 70 percent and is not adjustable.

b. The schematic diagrams will show two means of tuning the output of the modulator stage, Test Oscillators BC-376-H and BC-376-K differing from other models.

(1) In Test Oscillator BC-376-H coil assembly 52, and in Test Oscillator BC-376-K coil assembly Z-101, consist of three tapped variable inductances, one for each modulation frequency. These inductance coils are mounted on laminated cores sealed in a container with the open end against a thin sheet of bakelite.

The core I-piece which completes the magnetic circuit is held by spring tension against the bakelite separator and can be adjusted by turning the trimmer screws at the rear of the box. Thus the inductance may be varied in order to tune the oscillator to the proper frequency.

(2) Variable capacitors are used in all other models of Test Oscillator BC-376-( ) for tuning the output of the modulator stage. Three audio frequency tuning capacitors, one for each frequency, are used in this method.

6. METER CIRCUIT.

A 0-1 milliampere d-c meter, provided with suitable shunts and multipliers, reads voltages and currents as indicated for each position of the "METER" selector switch. Readings will ordinarily be accurate to within ±2 percent.

If meter values indicated are low on all scales by ap-

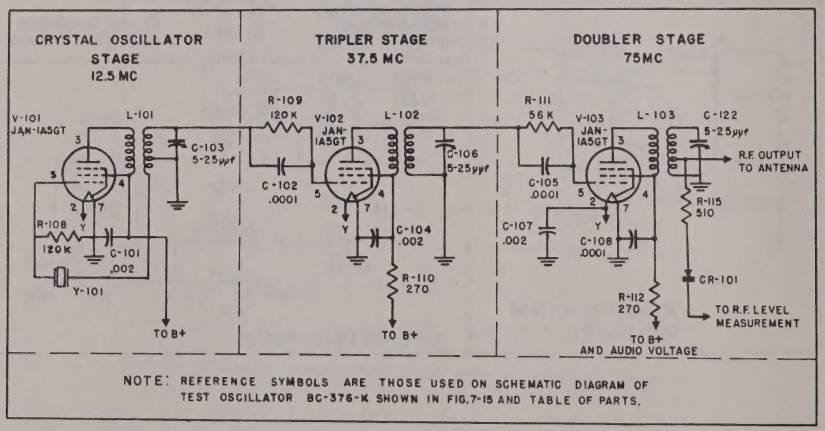


Figure 3-1B. Test Oscillator BC-376-K—Fundamental Radio Frequency Circuits

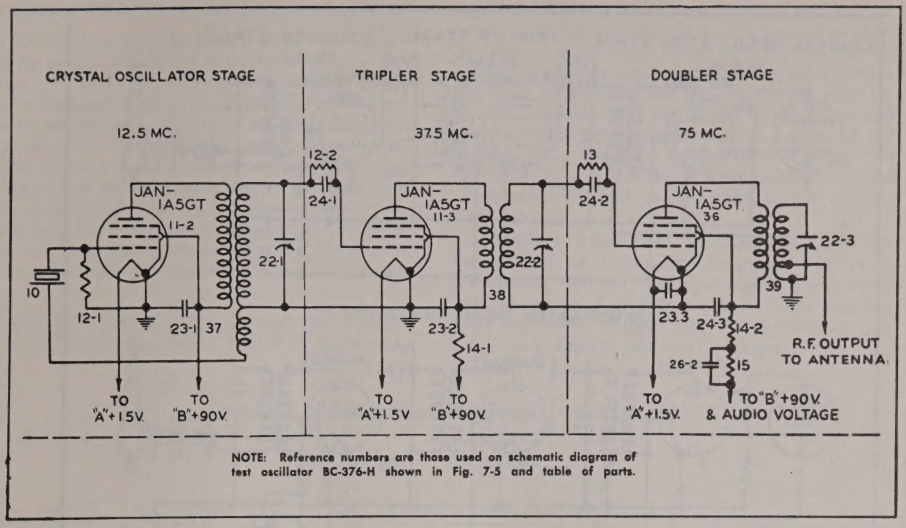


Figure 3-2. Test Oscillator BC-376-H—Fundamental Radio Frequency Circuits

proximately 25 to 50 percent less than the normal rating, other conditions being normal, it would be well to check the meter by putting a standard meter in series with it. The permanent magnets of the meter may have been affected, in which case the only remedy is to replace the meter with a new one.

SECTION IV
MAINTENANCE

1. PRE-OPERATIONAL INSPECTION.

a. BATTERIES.—Replace batteries if, when under load, the "A" voltage falls below 1.3 volts and the "B" voltage below 70 volts, as indicated on the panel meter when "METER" switch is thrown to "A" and "B."

CAUTION

In an exhausted battery, chemical action may cause the batteries to swell and damage the equipment.

b. VACUUM TUBES.

(1) After checking battery supply voltages, see that the tubes and the crystal are seated firmly in their sockets.

(2) See that tubes are functioning by the following checks:

(a) For a quick check on the output of the tubes, use a screw driver to vary the capacitors marked on the front panel "CRYSTAL —12.5," "TRIPLER —37.5," "DOUBLER —75." A dip or change in plate current, as indicated on the panel meter, will indicate an output from that stage.

(b) For an aural check on the modulation stage, plug a Headset HS-23, or its equal, into the "PHONES" jack and switch to various modulation positions.

(c) As a final check, test tubes in a tube tester or try them in another test oscillator.

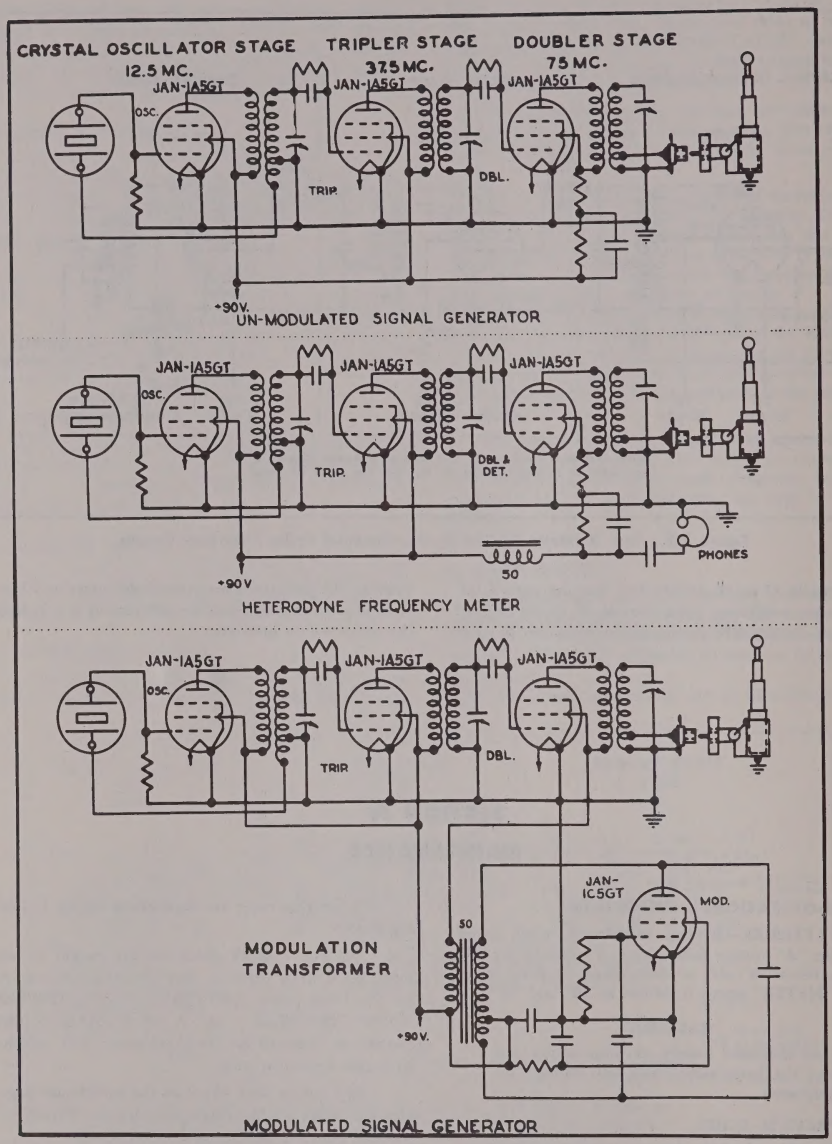


Figure 3-3. Test Oscillator BC-376-I)—Functional Circuit Diagrams

2. TROUBLE SHOOTING AT REPAIR STATION.

a. GENERAL.—First check the batteries in this equipment for proper operation. Replace batteries when "A" voltage falls below 1.3 volts and "B" voltage below 70 volts. Designed to give 25 to 50 hours of intermittent service when delivering the power drawn by this equipment, these batteries may swell under extended continuous service and emit corrosive white compound. Anticipate this condition and remove the compound before it can leak through the impregnated wood in the battery case. If the oscillator is to be out of service for more than two months, remove batteries. Never store the oscillator with the batteries in a run-down condition.

b. CIRCUIT CHECK.—If "A" and "B" voltages are correct, check plate circuits. Failure to obtain readings may indicate a blown fuse. If this is the case, disconnect the battery cable plug and locate the short or overload in the circuit before replacing. See that the antenna is properly installed and making good contact. Check the battery cable and transmission line plugs for proper connection, also the contact of the crystal and tubes in their sockets. Examine tubes for a dull red filament glow. Check for broken leads or parts. Test the tubes in a tube-tester or another test oscillator. Check socket terminal voltages with table 4-1, this section.

c. SOCKET TERMINAL VOLTAGES.—Check values obtained for a reasonable compliance with values indicated in table 4-1. The condition of the batteries will, of course, directly affect these values. Measure plate and screen voltages with a high-resistance voltmeter using the 100-volt range or higher.

TABLE 4-1. TUBE SOCKET TERMINAL VOLTAGES.

Socket Terminal		*Voltage to Ground*				
		Test Oscillator				
		BC-376-A	*BC-376-E*	*BC-376-F&G*	*BC-376-H*	*(x) BC-376-K*
Pin. No.	*Element*	*Tube JAN-1A5GT Crystal Oscillator (Tube Crystal)*				
1	*	*	*	*	*	*
2	Filament	1.3	1.3	1.3	1.4	1.4
3	Plate	72	82	82	88	85
4	Screen	72	82	82	88	85
5	Grid	†	†	†	†	†
6	*	*	*	*	*	*
7	Filament	0	0	0	0	0
8	*	*	*	*	*	*
		Tube JAN-1A5GT—Tripler				
1	*	*	*	*	*	*
2	Filament	1.3	1.3	1.3	1.4	1.4
3	Plate	68	78	82	87	85
4	Screen	68	78	82	87	85
5	Grid	†	†	†	†	†
6	*	*	*	*	*	*
7	Filament	0	0	0	0	0
8	*	*	*	*	*	*
		Tube JAN-1A5GT—Doubler				
1	*	*	*	*	*	*
2	Filament	1.3	1.3	1.3	1.4	1.4
3	Plate	48	56	30	59	55
4	Screen	48	56	80	59	55
5	Grid	†	†	†	†	†
6	*	*	*	*	*	*
7	Filament	0	0	0	0	0
8	*	*	*	*	*	*
		Tube JAN-1C5GT—Modulator				
1	*	*	*	*	*	*
2	Filament	1.3	1.3	1.3	1.4	1.4
3	Plate	64†	80	80	85	82
4	Screen	38†	48	52	85	82
5	Grid	−1.5†	−3.1	−5.6	−2.0	−4(y)
6	*	*	*	*	*	*
7	Filament	0	0	0	0	0
8	*	*	*	*	*	*

* Indicates dummy pin.
† D-C readings not recommended.
MODULATION switch On
(x)—RF LEVEL in maximum clockwise position.
(y)—MODULATION switch at 3000 cps.

d. CRYSTAL OSCILLATOR STAGE.—Turn the "METER" switch to the "XTL" position and note plate current when the crystal tuning capacitor is rotated. If no dip is obtained, even with a new tube, it is probable that the crystal is not working. Install a new crystal unit. Because of its delicate pressure mounting, do not tamper with the crystal itself. If no dip is obtainable even with a new crystal, make a continuity check of the 12.5-megacycle inductance coil, tuning capacitor, bypass capacitor, and grid leak of this stage.

e. TRIPLER STAGE.—If the crystal is oscillating, check the frequency tripling stage. This is best done by measuring the radio-frequency voltage developed across the plate-tuned circuit with a vacuum tube voltmeter suitable for uhf. Using short connecting leads, place the probe across the plate inductance (or capacitance) with its "low" side to ground, measuring the r-f output on the 50 or 150-volt range. Tune for maximum indication. If no output is obtained, check Tube JAN-1A5GT (Tube VT-124), tripler inductance coil, tuning capacitor, grid capacitor, filter resistor, and bypass capacitor. Approximately 25 to 30 volts should be obtained when the tripler capacitor is tuned to resonance.

f. DOUBLER STAGE.—If the tripler output is suitable, check the r-f output of the doubler in the same way as that given for the tripler stage. About 15 to 16 volts should be obtained with modulation off, and 20 to 25 volts with modulation on. Since the capacity of the probe will detune this circuit, a readjustment will be necessary when the vacuum-tube voltmeter is removed. If no output is obtained, check the doubler Tube JAN-1A5GT (Tube VT-124), doubler inductance coil, tuning capacitor, grid leak, grid capacitor, bypass capacitor and transmission line for open circuits or short circuits to ground.

g. MODULATOR STAGE.—Measure the r-f output of the oscillator with the vacuum-tube voltmeter, the probes connected between the antenna and case. The "high" side probe making a firm contact on the antenna as near the case as possible, and the "low" side connecting to one of the screws supporting the antenna socket cover plate. With modulation off, about 1.5 volts output should be obtained; with modulation on, about 2.5 volts should be obtained. If no output is obtained, check the antenna socket, transmission line, and plug. If an indication is obtained, tune all stages for maximum output. This procedure is more accurate than the plate dip method of tuning.

(1) If no difference in output is observed between modulation "OFF" and modulation "ON" at any of the three positions of the selector switch, the oscillator modulator stage may be at fault. Try replacing the modulator stage Tube JAN-1C5GT (Tube VT-125).

• (2) The audio-frequency output of this tube may be measured with a vacuum-tube voltmeter (50-volt range). Plug one end of cord CD-316 into the "PHONES" jack on the oscillator. With alligator clips or other suitable means, connect the "high" side probe to the tip of the free Plug PL-55, the "low" side to the sleeve. Readings for all frequencies should be between 20 and 35 volts. If little or no voltage is obtained, check for open or short circuits. For terminal strip identification and modulation transformer winding connections, see circuit wiring diagram.

h. INDICATING METER, SHUNTS AND MULTIPLIERS.—A O-1 milliampere d-c meter, provided with suitable shunts and multipliers, reads voltages and currents as indicated for each position of the meter selector switch. The meter should be accurate at any reading to within plus or minus 1 small-scale division, which corresponds to plus or minus 2% of full scale. Meter shunts and multipliers, when measured on a bridge should check within 1 percent of the values indicated in the Table of Parts. The total resistance of the meter is 135 ohms. This is the resistance of the meter plus a self contained series resistor. If the accuracy of the meter is in doubt, connect a precision meter of equal or slightly larger range in series with it and compare readings for the various positions of the selector switch. These readings will not be true indications of the operation of the oscillator if the added resistance of the precision meter materially effects the circuit, as it ordinarily will. However, for purposes of comparison of the two meters, this method is suitable.

3. CALIBRATION.

a. GENERAL.—This equipment will be inspected at intervals of 90 days to determine the accuracy of the calibration.

Note

The following calibration procedure is written for Test Oscillator BC-376-K. For calibration purposes this set differs from earlier models only in control labels and the addition of one control and one switch, both of which are controlled from the front panel and labeled R. F. LEVEL and R. F. NORM. respectively. Any steps contained in this calibration procedure which apply to these control settings, should be disregarded when calibrating any model other than BC-376-K or a modified version of an earlier model. On some models the METER switch is labeled A-B-XTAL-TRP-DBL-MOD while on model BC-376-K this switch is labeled A-B-XTAL-TRIP-DOUB-MOD.

b. TEST EQUIPMENT REQUIRED.—The following test equipment, or equivalent, is required to calibrate Test Oscillator BC-376-( ).

(1) Frequency Meter AN/USM-26.

TABLE 4-2. NORMAL PLATE AND SCREEN CURRENTS‡

Meter Test Position					*Modulation*			*Total Current*
Battery Voltage *A*	*B*	*XTAL*	*TRIP*	*DOUB*	*400 Cycles MOD*	*1300 Cycles MOD*	*3000 Cycles MOD*	*(with 1300 cps MOD) 1300 cycles*
				Test Oscillator BC-376-E				
1.46	89	4.82	8.2	6.02	6.6	6.25	5.97	25.29
1.24	66	3.3	5.01	3.7	4.5	4.21	4.02	16.22
				Test Oscillator BC-376-H				
1.48	88	5.4	8.0	6.3	6.4	7.4	5.45	27.1
1.27	68	3.75	5.1	4.0	7.6	4.6	3.7	17.45
				Test Oscillator BC-376-K				
(x) 1.45	87	4.0	6.2	5.1	6.1	6.7	9.7	22.0
(y) 1.45	87	3.1	4.5	3.8	4.9	5.3	7.8	16.7

‡ Variations of plus or minus 1.0 milliampere from the above current values may be considered normal depending on the tubes used, battery conditions and model.
(x) R.F. LEVEL potentiometer in full clockwise position.
(y) R.F. Meter indication at half scale.

(2) Audio Oscillator TS-382D/U.

(3) Oscilliscope AN/USM-24.

(4) Vacuum Tube Voltmeter, Hewlett Packard Model 410B.

c. PRELIMINARY ELECTRICAL TEST.

(1) Remove test oscillator from case.

(2) Check batteries for proper installation.

(3) Set battery switch to ON position.

(4) Set METER switch to position A.

(5) Meter should indicate at least 1.3 volts.

(6) Set METER switch to position B.

(7) Meter should indicate at least 70 volts.

Note

If conditions in steps (5) and (7) above are not met, replace the batteries in accordance with paragraph 2.*b*.

d. CRYSTAL OSCILLATOR.

(1) Apply power to Frequency Meter AN/USM-26 and allow to stabilize.

(2) Set frequency meter for monitor operation at 12.5-megacycles.

(3) Connect a short wire to antenna connection on frequency meter.

(4) Insert the antenna E-101 into connector J-102 on test oscillator and extend antenna full length.

(5) Set METER switch on test oscillator to XTAL position.

(6) Set R. F. LEVEL control on test oscillator fully clockwise.

TABLE 4-3. R-F VOLTAGE OUTPUT OF TEST OSCILLATOR BC-376A, BC-376F, BC-376G, BC-376H AND BC-376-K.

No Modulation	*Output 400 cycles MOD*	*Output 1300 cycles MOD*	*Output 3000 cycles MOD*	*Battery Voltage* *A*	*B*
		Test Oscillator BC-376-A			
1.52	2.23	2.27	2.24	1.40	89
		Test Oscillator BC-376-F and G			
1.65	2.40	2.47	2.56	1.46	86
		Test Oscillator BC-376-H			
1.75	2.72	2.69	2.80	1.48	86
		**Test Oscillator BC-376-K*			
2.2	2.7	2.7	2.6	1.45	88

* RF LEVEL readjusted to half scale for each condition.

(7) Set R. F. – NORM. switch on test oscillator to NORM. position.

(8) Adjust 12.5 CRYSTAL control on test oscillator for minimum reading on panel meter.

(9) Loosely couple wire from antenna connection of frequency meter to L-101 in test oscillator. (See figure 5-13.)

(10) Adjust 12.5 CRYSTAL control, on test oscillator, for zero beat as indicated at frequency meter head set.

(11) Meter on test oscillator should indicate 4.0 ± 1 milliamperes.

(12) Set R. F. – NORM. switch to R. F position.

(13) Adjust R. F. LEVEL control for center scale reading on meter.

(14) Set R. F. – NORM. switch to NORM. position.

(15) Meter should indicate 3.1 ± 1 milliamperes.

e. TRIPLER AMPLIFIER.

(1) Set R. F. LEVEL control fully clockwise.

(2) Set METER switch to TRIP position.

(3) Loosely couple wire from antenna connection of frequency meter to L-102 in test oscillator. (See figure 5-13.)

(4) Adjust 37.5 TRIPLER control for zero beat as indicated at frequency meter headset.

(5) Meter on test oscillator should indicate 6.2 ± 1 milliamperes.

(6) Set R. F. – NORM. switch to R. F. position.

(7) Adjust R. F. LEVEL control for center scale reading on meter.

(8) Set R. F. NORM. switch to NORM. position.

(9) Meter should indicate 4.5 ± 1 milliamperes.

f. DOUBLER AMPLIFIER.

(1) Set R. F. LEVEL control fully clockwise.

(2) Set METER switch to DOUB position.

(3) Loosely couple wire from antenna connection of frequency meter to L-103 in test oscillator. (See figure 5-13.)

(4) Adjust 75 DOUBLER control for zero beat as indicated at frequency meter headset.

(5) Meter on test oscillator should indicate 5.1 ± 1 milliamperes.

(6) Set R. F. – NORM. switch to R. F. position.

(7) Adjust R. F. LEVEL control for center scale reading on meter.

(8) Set R. F. – NORM. switch to NORM. position.

(9) Meter should indicate 3.8 ± 1 milliamperes.

g. MODULATOR.

(1) Apply power to Audio Oscillator TS-382D/U and allow to stabilize.

(2) Apply power to Oscilloscope AN/USM-24 and allow to stabilize.

(3) Adjust audio oscillator to 400 cps.

(4) Connect audio oscillator output to oscilloscope vertical input.

(5) Set oscilloscope for normal sweep presentation.

(6) Set oscilloscope sync selector to hi ext. position.

(7) Set oscilloscope sweep delay to out position.

(8) Set oscilloscope marker intervals to off position.

(9) Set oscilloscope coarse sweep time to position 10.

(10) Set MODULATION switch on test oscillator to position 400.

(11) Set METER switch on test oscillator to MOD position.

(12) Set R. F. LEVEL control on test oscillator fully clockwise.

(13) Connect PHONES connector of test oscillator to external sync connection of oscilloscope.

(14) Adjust 400 control on coil Z-101 in test oscillator, (see figure 5-11); for a single straight line on oscilloscope.

Note

This line may trace along the X or Y axis of the oscilloscope or along some intermediate axis between the two. The direction of the line does not matter. Adjust fine sweep control as necessary to obtain the desired condition in step (14) above.

(15) Lock 400 control on coil Z-101.

(16) The meter on test oscillator should indicate 6.1 ± 1 milliamperes.

(17) Set R. F. NORM. switch to R. F. position.

(18) Adjust R. F. LEVEL control for center scale reading on meter.

(19) Set R. F. – NORM. switch to NORM. position.

(20) Meter should indicate 4.9 ± 1 milliamperes.

(21) Set R. F. LEVEL control fully clockwise.

(22) Adjust audio oscillator to 1300 cps.

(23) Set MODULATION switch on test oscillator to position 1300.

(24) Adjust 1300 control on coil Z-101 in test oscillator, (See figure 5-11), for a single straight line on oscilloscope.

(25) Lock 1300 control on coil Z-101.

(26) The meter on test oscillator should indicate 6.7 ± 1 milliamperes.

(27) Set R. F. – NORM. switch to R. F position.

(28) Adjust R. F. LEVEL control for center scale reading on meter.

(29) Set R. F. – NORM. switch to NORM. position.

(30) Meter should indicate 5.3 ± 1 milliamperes.

(31) Set R. F. LEVEL control fully clockwise.

(32) Adjust audio oscillator to 3000 cps.

(33) Set MODULATION switch on test oscillator to position 3000.

(34) Adjust 3000 control on coil Z-101 in test oscillator, (See figure 5-11), for a single straight line on oscilloscope.

(35) Lock 3000 control on coil Z-101.

(36) The meter on test oscillator should indicate 9.7 ± 1 milliamperes.

(37) Set R. F. – NORM. switch to R. F position.

(38) Adjust R. F. LEVEL control for center scale reading on meter.

(39) Set R. F. – NORM. switch to NORM. position.

(40) Meter should indicate 7.8 ± 1 milliamperes.

(41) Disconnect audio oscillator and oscilloscope.

b. FINAL CALIBRATION.

(1) Apply power to vacuum tube voltmeter and allow to stabilize.

(2) Set vacuum tube voltmeter for a-c volts and 50 volt range.

(3) Set vacuum tube voltmeter to PHONES connector on test oscillator.

(4) Set MODULATION switch to position 400.

(5) Vacuum tube voltmeter should indicate 30 volts.

Note

This is a rough check for percentage modulation and reading of 30 volts corresponds to modulation percentage of approximately 70%.

(6) Set MODULATION switch to position 1300.

(7) Vacuum tube voltmeter should indicate 30 volts.

(8) Set MODULATION switch to position 3000.

(9) Vacuum tube voltmeter should indicate 30 volts.

(10) Connect vacuum tube voltmeter between antenna and case of test oscillator.

(11) Set vacuum tube voltmeter to 10 volt range.

(12) Set MODULATION switch to Off position.

(13) Vacuum tube voltmeter should indicate 1.5 volts.

(14) Set MODULATION switch to position 400.

(15) Vacuum tube voltmeter should indicate 2.5 volts.

(16) Disconnect vacuum tube voltmeter.

Note

Test oscillator should be given a monitor test utilizing standard marker beacon transmitter or any 75-megacycle transmitter having an output of 20 watts or less.

4. VOLTAGE, CURRENT, AND RESISTANCE CHARTS.

a. Table 4-2 shows the normal plate and screen currents for Test Oscillator BC-376-E, BC-376-H and BC-376-K*.

b. Table 4-3 shows the r-f voltage output of Test Oscillator BC-376-A, BC-376-F, BC-376-G, BC-376-H, and BC-376-K. It is the output taken from the base of the antenna, externally.*

c. Table 4-4 shows the point-to-point resistance measurements of Test Oscillator BC-376-A.

d. Table 4-5 shows the point-to-point resistance measurements of Test Oscillator BC-376-E.

e. Table 4-6 shows the point-to-point resistance measurements of Test Oscillator BC-376-F and BC-376-G.

f. Table 4-7 shows the point-to-point resistance measurements of Test Oscillator BC-376-H. Table 4-7a shows the point-to-point resistance measurements of Test Oscillator BC-376-K.

* Tubes selected at random.

TABLE 4-4. POINT-TO-POINT RESISTANCE MEASUREMENTS OF TEST OSCILLATOR BC-376-A

*From Battery Plug**	*to*	*Resistance in Ohms*	*Probable Cause of Wrong Reading*
		Socket 36-1 (Crystal Circuit)	
Pin No. 1	Plate	15	Open coil 37 Defective resistor 18-4 Fuse blown
Pin No. 1	Screen	15	Defective resistor 18-4 Fuse blown
†	Grid	100,000	Defective resistor 12-1
		Socket 36-2 (Tripler Circuit)	
Pin No. 1	Plate	275	Open coil 38 Defective resistors 14-1, 18-3 Defective capacitor 23-2
Pin No. 1	Screen	275	Defective resistors 14-1, 18-3
†	Grid	55,000	Defective resistor 12-2 Defective capacitors 24-1, 22-1 Open coil 37
		Socket 36-3 (Doubler Circuit)	
Pin No. 1	Plate	57,000	Open coil 39 Defective resistors 14-2, 15, 18-2 Defective modulation transformer 50
Pin No. 1	Screen	57,000	Defective resistors 14-2, 15, 18-2 Defective modulation transformer 50
†	Grid	55,000	Defective resistor 13 Defective capacitors 24-2, 22-2 Open coil 38
		Socket 36-4 (Modulator Circuit)	
Pin No. 1	Plate	135	Defective modulation transformer 50 Defective resistor 18-1 Defective capacitor 25-2
Pin No. 1	Screen‡	25,000	Defective capacitors 25-1, 25-2 Defective resistor 16
†	Grid	50,000	Defective resistor 17

* With battery switch 48 on.
† Measured from grid to ground.
‡ With switch 46 on.

TABLE 4-5. POINT-TO-POINT RESISTANCE MEASUREMENTS OF TEST OSCILLATOR BC-376-E

*From Battery Plug**	*to*	*Resistance in Ohms*	*Probable Cause of Wrong Reading*
		Socket 36-1 (Crystal Circuit)	
Pin No. 1	Plate	28	Open coil 37 Defective resistor 18-4 Fuse blown
Pin No. 1	Screen	28	Defective resistor 18-4 Fuse blown Defective capacitor 23-1 Defective resistor 12-1
†	Grid	100,000	
		Socket 36-2 (Tripler Circuit)	
Pin No. 1	Plate	275	Open coil 38 Defective resistors 18-3, 14-1
Pin No. 1	Screen	275	Defective resistors 18-3, 14-1 Defective capacitor 23-2
†	Grid	100,000	
		Socket 36-3 (Doubler Circuit)	
Pin No. 1	Plate	5000	Open coil 39 or modulation transformer 50 Defective resistors 18-2, 15, or 14-2 Defective capacitors 24-3 or 26
Pin No. 1	Screen	5000	Defective modulation transformer 50 Defective resistors 18-2, 15, or 14-2 Defective capacitors 24-3 or 26
†	Grid	50,000	Defective resistor 13 Defective capacitor 24-2
		Socket 36-4 (Modulator Circuit)	
Pin No. 1	Plate	125	Defective modulation transformer 50 Defective capacitor 25-2 Defective resistor 18-1
Pin No. 1	Screen‡	25,000	Defective modulation transformer 50 Defective resistor 18-1 Defective capacitor 25-2
†	Grid	50,000	Defective resistor 17

* With battery switch 48 on.
† Measured from grid to ground.
‡ With switch 46 on.

TABLE 4-6. POINT-TO-POINT RESISTANCE MEASUREMENTS OF TEST OSCILLATOR BC-376-F AND BC-376-G

*From Battery Plug**	*to*	*Resistance in Ohms*	*Probable Cause of Wrong Reading*
		Socket 36-1 (Crystal Circuit)	
Pin No. 1	Plate	15	Open coil 37 Defective resistor 18-4 Fuse blown
Pin No. 1	Screen	15	Defective resistor 18-4 Fuse blown Defective capacitor 23-1 Defective capacitor 12-1
†	Grid	100,000	
		Socket 36-2 (Tripler Circuit)	
Pin No. 1	Plate	15	Open coil 38 Defective resistor 18-3
Pin No. 1	Screen	0	
†	Grid	110,000	Defective resistor 12-2 Defective capacitor 24-1 Defective coil 37

TABLE 4-6. POINT-TO-POINT RESISTANCE MEASUREMENTS OF TEST OSCILLATOR BC-376-F AND BC-376-G (CONTINUED)

*From Battery Plug**	*to*	*Resistance in Ohms*	*Probable Cause of Wrong Reading*
		Socket 36-3 (Doubler Circuit)	
Pin No. 1	Plate	7000	Defective coil 39 Defective resistors 14, 15, 18-2 and modulation transformer 50
Pin No. 1	Screen	50	Defective capacitor 24-3 Defective modulation transformer 50
†	Grid	50,000	Defective resistor 13-1 Defective capacitor 24-2 Defective coil 38
		Socket 36-4 (Modulator Circuit)	
Pin No. 1	Plate	75	Defective modulation transformer 50 Defective resistor 18-1
Pin No. 1	Screen	26,500	Defective switch 46 Defective resistors 16 and 18-1
†	Grid	100,000	Defective resistor 52

* With battery switch 48 on.
† Measured from grid to ground.

TABLE 4-7. POINT-TO-POINT RESISTANCE MEASUREMENTS OF TEST OSCILLATOR BC-376-H

*From Battery Plug**	*to*	*Resistance in Ohms*	*Probable Cause of Wrong Reading*
		Socket 11-2 (Crystal Circuit)	
Pin No. 1	Plate	15	Open coil 37 Defective resistor 18-4 Fuse blown
Pin No. 1	Screen	15	Defective resistor 18-4 Defective capacitor 23-1 Fuse blown Defective resistor 12-1
†	Grid	100,000	
		Socket 11-3 (Tripler Circuit)	
Pin No. 1	Plate	265	Open coil 38 Defective resistor 14-1 or 18-3
Pin No. 1	Screen	265	Defective resistor 14-1 or 18-3 Defective capacitor 23-2
†	Grid	100,000	
		Socket 36 (Doubler Circuit)	
Pin No. 1	Plate	5500	Open coil 39 or modulation transformer 50 Defective resistors 14-2, 18-2, or 15 Defective capacitors 24-3 or 26-2
Pin No. 1	Screen	5500	Defective modulation transformer 50 Defective resistors 14-2, 15, or 18-2 Defective capacitors 24-3 or 26-2
†	Grid	50,000	Defective resistor 13 Capacitor 24-2
		Socket 35 (Modulator Circuit)	
Pin No. 1	Plate	500†	Defective modulation transformer 50 Defective capacitor 25 Defective resistor 18-1
Pin No. 1	Screen	500	Defective modulation transformer 50 Defective resistor 18-1 Defective capacitor 25
†	Grid	50,000	Defective resistor 17 Defective capacitor 34

Note: Resistance between all plates and screens to ground—infinity (except with meter in "B" position, resistance is 100,000 ohms).
* With battery switch 48 on.
† Measured from grid to ground.
‡ With "MODULATION" switch on. With switch off, resistance is infinity.

TABLE 4-7A. POINT-TO-POINT RESISTANCE MEASUREMENTS OF TEST OSCILLATOR BC-376-K.

*From Battery Plug**	*to*	*Resistance in Ohms*	*Probable Cause of Wrong Reading*
		Socket X-101 (Crystal Circuit)	
Pin No. 1	Plate	22(x)	Open Coil L-101
		2000(y)	Defective R-104 or R-103
			Defective C-101
			Fuse Blown F-101
Pin No. 1	Screen	22(x)	Defective R-104 or R-103
		2000(y)	Defective C-101
†	Grid	120,000	Defective R-108
		Socket V-102 (Tripler Circuit)	
Pin No. 1	Plate	300(x)	Open Coil L-102
		2300(y)	Defective R-105, R-110 or R-103
Pin No. 1	Screen	300(x)	Defective R-105, R-110 or R-103
		2300(y)	
†	Grid	120,000	Defective C-104
			Open Coil L-101
			Defective R-109
			Defective C-102
		Socket X-103 (Doubler Circuit)	
Pin No. 1	Plate	6500(x)	Open coil L-103 or modulation transformer T-101
		8500(y)	Defective R-112, R-113, R-106 or R-103
			Defective C-108, C-109
Pin No. 1	Screen	6500(x)	Defective modulation transformer T-101
			Defective R-112, R-113, R-106 or R-103
			Defective C-108, C-109
†	Grid	56,000	Defective R-111
			Defective C-105
			Open coil L-102
		Socket X-104 (Modulator Circuit)	
Pin No. 1	Plate	500(x)‡	Defective modulation transformer T-101
		2500(y)‡	Defective C-111
			Defective R-107
Pin No. 1	Screen	500(x)	Defective modulation transformer T-101
		2500(y)	Defective R-107
			Defective C-111
†	Grid	50,000	Defective R-114
			Defective C-113

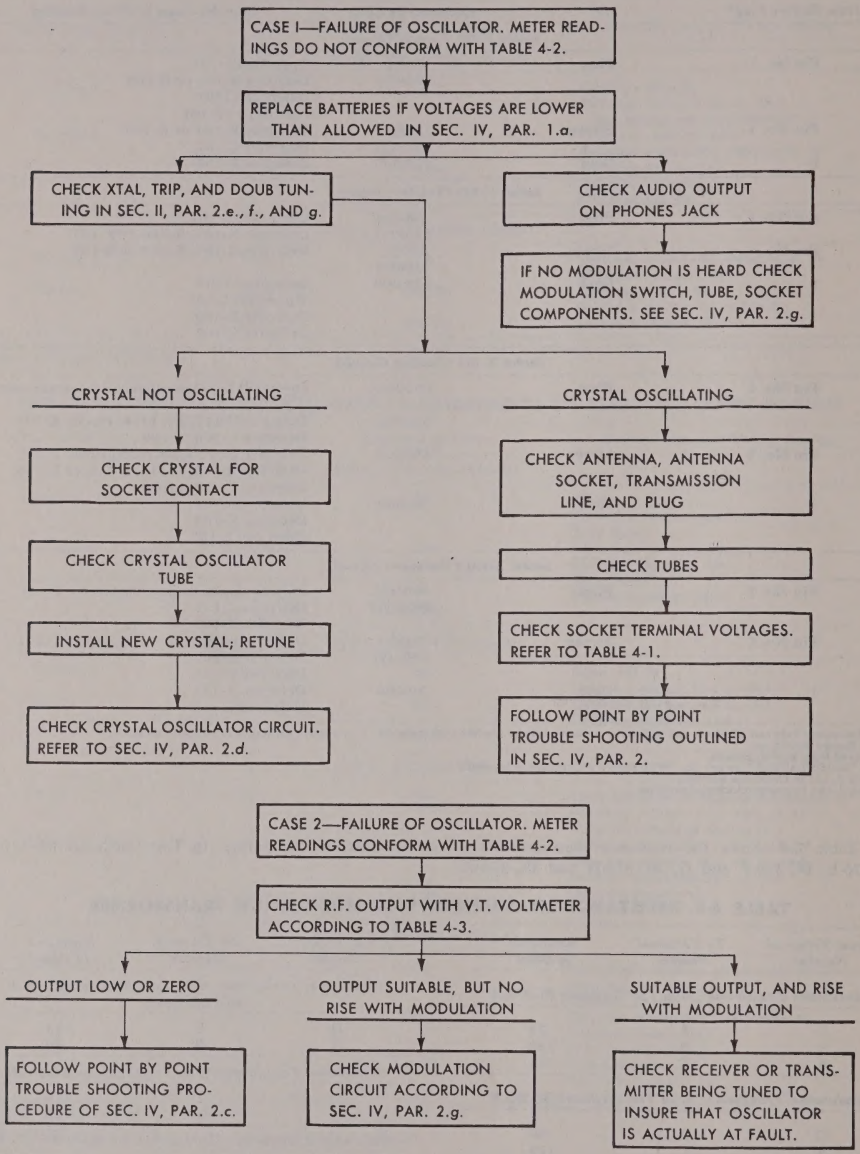
Note: Resistance between all plates and screens to ground—infinity (except with meter in "B" position, resistance is 100,000 ohms).
* With Battery Switch on.
† Measured from grid to ground.
‡ With "MODULATION" switch on. With switch off, resistance is infinity.
(x) With R-103 in clockwise position.
(y) With R-103 in counterclockwise position.

g. Table 4-8 shows the resistance measurements of the modulation transformer in Test Oscillator BC-376-A, BC-376-E, BC-376-F and G, BC-376-H and BC-376-K.

TABLE 4-8. RESISTANCE MEASUREMENTS OF MODULATION TRANSFORMER

From Terminal Number	*To Terminal Number*	*Resistance in Ohms*
Modulation Transformer 50 in Test Oscillator BC-376-A		
D	E	75
A	B	120
A	C	145
Modulation Transformer 50 in Test Oscillator BC-376-E		
D	E	60
A	C	123
A	B	100
B	C	23
Modulation Transformer 50 in Test Oscillator BC-376-F and BC-378-G		
D	E	53
A	B	80
Modulation Transformer 50 in Test Oscillator BC-376-H		
1	2	410
3	4	320
Modulation Transformer T-101 in Test Oscillator BC-376-K		
3	4	500
1	2	320

TABLE 4-9. TROUBLE LOCATION AND REMEDY CHART, TEST OSCILLATOR BC-376-( )


CASE I—FAILURE OF OSCILLATOR. METER READINGS DO NOT CONFORM WITH TABLE 4-2.
REPLACE BATTERIES IF VOLTAGES ARE LOWER THAN ALLOWED IN SEC. IV, PAR. 1.a.
CHECK XTAL, TRIP, AND DOUB TUNING IN SEC. II, PAR. 2.e., f., AND g.
CHECK AUDIO OUTPUT ON PHONES JACK
IF NO MODULATION IS HEARD CHECK MODULATION SWITCH, TUBE, SOCKET COMPONENTS. SEE SEC. IV, PAR. 2.g.
CRYSTAL NOT OSCILLATING
CRYSTAL OSCILLATING
CHECK CRYSTAL FOR SOCKET CONTACT
CHECK CRYSTAL OSCILLATOR TUBE
INSTALL NEW CRYSTAL; RETUNE
CHECK CRYSTAL OSCILLATOR CIRCUIT. REFER TO SEC. IV, PAR. 2.d.
CHECK ANTENNA, ANTENNA SOCKET, TRANSMISSION LINE, AND PLUG
CHECK TUBES
CHECK SOCKET TERMINAL VOLTAGES. REFER TO TABLE 4-1.
FOLLOW POINT BY POINT TROUBLE SHOOTING OUTLINED IN SEC. IV, PAR. 2.
CASE 2—FAILURE OF OSCILLATOR. METER READINGS CONFORM WITH TABLE 4-2.
CHECK R.F. OUTPUT WITH V.T. VOLTMETER ACCORDING TO TABLE 4-3.
OUTPUT LOW OR ZERO
OUTPUT SUITABLE, BUT NO RISE WITH MODULATION
SUITABLE OUTPUT, AND RISE WITH MODULATION
FOLLOW POINT BY POINT TROUBLE SHOOTING PROCEDURE OF SEC. IV, PAR. 2.c.
CHECK MODULATION CIRCUIT ACCORDING TO SEC. IV, PAR. 2.g.
CHECK RECEIVER OR TRANSMITTER BEING TUNED TO INSURE THAT OSCILLATOR IS ACTUALLY AT FAULT.

SECTION V
SUPPLEMENTARY DATA

1. TECHNICAL SUMMARY.

a. TUBE COMPLEMENT.

Quantity	*JAN type*	*VT type*	*Function*
1	JAN-1A5GT	VT-124	Crystal oscillator
1	JAN-1A5GT	VT-124	Frequency tripler
1	JAN-1A5GT	VT-124	Frequency doubler
1	JAN-1C5GT	VT-125	Audio oscillator

b. FREQUENCY.—Test Oscillator BC-376-( ) is operated on a frequency of 75 megacycles.

c. FREQUENCY STABILITY.—Test Oscillator BC-376-( ) is designed to operate satisfactorily in the temperature range of −26.1° to +55°C (−15° to +130°F). Over this range, the carrier frequency drift with temperature is less than 150 cycles per degree C.

d. PEAK TO PEAK VOLTAGE OUTPUT.—The peak to peak voltage output of the Test Oscillator BC-376-( ) is about 3 volts a-c depending on the model.

e. POWER SUPPLY.—Power is supplied by one Battery BA-35 and two each Battery BA-36.

f. CURRENT REQUIRED AT SPECIFIED RATED VOLTAGE.—With the modulation switch on and with the equipment properly tuned, the voltages and currents drawn by the oscillator are 0.25 ampere at 1.5 volts for the filaments, and 27 milliamperes at 90 volts for plates and screens.

g. MODULATION CAPABILITY. — Percentage modulation for the three audio frequencies used is about 70 percent. Frequency shift is within plus or minus 2 percent.

h. TYPE AND METHOD OF MODULATION.—The carrier frequency of Test Oscillator BC-376-( ) is amplitude, plate-modulated, with the exception of test Oscillators BC-376-F and BC-376-G which are screen-grid modulated.

i. TUBE RATINGS.—Vacuum tubes in Test Oscillator BC-376-( ) are not operated at their rated values and are not necessarily expected to give manufacturer's rated tube life. For manufacturer's rating of tubes used in this equipment, refer to the table 5—1.

2. TEST INDICATOR BE-67-( ).

a. GENERAL DESCRIPTION.

(1) Test Indicator BE-67-( ) is used as an output meter to tune marker beacon receivers, and to supply direct current to the relay for relay adjustment.

(2) The test indicator consists primarily of a d-c milliammeter, two 4½-volt batteries, a variable resistor, an output jack, and a double throw toggle switch, all mounted in a small wooden or metal case. (See figures 1-2, 1-2A, and 1-2B.)

(3) This unit may come packed in a container separate from the oscillator. Check elements before assembly. Batteries are supplied separately.

b. OPERATION AND ADJUSTMENT.

(1) To install batteries in Test Indicator BE-67-( ), remove the panel from the case by taking out the six screws in the front. Loosen the clamp screws, and insert the batteries as shown in figure 5-1. Connect leads to battery terminals. When in use, the current drain from the batteries varies, but it is usually less than 1 milliampere. As battery drain is very low and intermittent, long life may be expected of the batteries.

(2) No preliminary adjustment is required to place the Test Indicator BE-67-( ) in operation, except that the point of the meter should be at zero when there is no current flowing through the meter. Turn the small screw-head in the glass on the face of the meter to set the pointer at zero if this is necessary. The instrument contains a precision meter, and therefore should be handled as such. The jar and vibration of ordinary travel conditions may throw the pointer off zero when at rest. Check the meter occasionally for zero rest.

TABLE 5—1. MANUFACTURER'S RATING OF VACUUM TUBES USED IN TEST OSCILLATOR BC-376-( )

Tube	*Tube JAN-1A5GT (Tube VT-124)*	*Tube JAN-1C5GT (Tube VT-125)*
Function	*Crystal Oscillator Frequency Tripler Frequency Doubler*	*Audio Oscillator-Modulator*
Base	*Small Shell Octal 7-Pin*	*Small Shell Octal 7-Pin*
Filament Volts	1.4	1.4
Filament Current, milliamperes	50	100
Plate Volts	90 maximum	90 maximum
Plate Current, milliamperes	4.0	7.5
Screen Volts	90 maximum	90 maximum
Screen Current, milliamperes	0.8	1.6
Grid Voltage	−4.5	−7.5
Plate Resistance	0.3 megohm, approx	115,000 ohms, approx.
Transconductance, microhms	850	1550

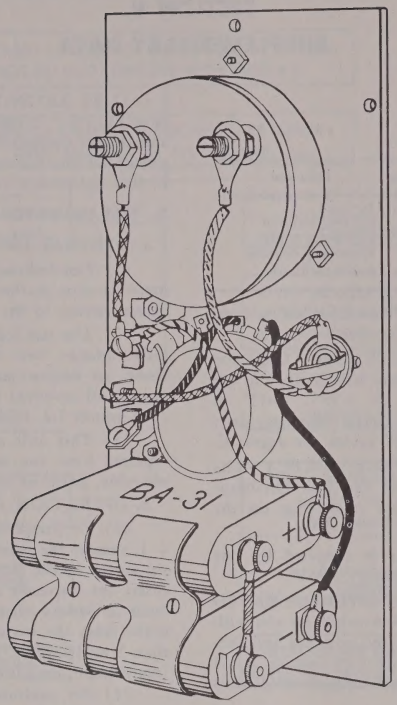


Figure 5-1. Test Indicator BE-67-( )—Battery and Meter Connections

(3) Refer to section II, paragraph 4.*a.*, for information on the use of Test Indicator BE-67-( ) in tuning the marker beacon receivers.

(4) To test or adjust the marker beacon receiver relay, remove signal input to the receiver. Leave Cord CD-316 connected to jack. Hold the toggle switch of Test Indicator BE-67-( ) in the "ADJUST RELAY" position. Turn the control knob on the test indicator clockwise until the marker beacon indicator light goes on, then reverse the knob until the light goes off. Observe current values on the meter at the exact points at which the indicator light goes on and off. Refer to the marker beacon instructions for the exact values of relay closing and opening currents.

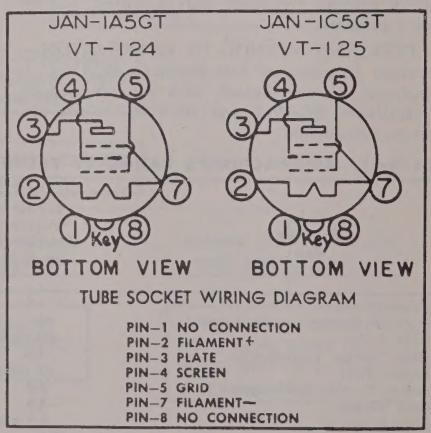


Figure 5-2. Tube Socket Wiring Diagram

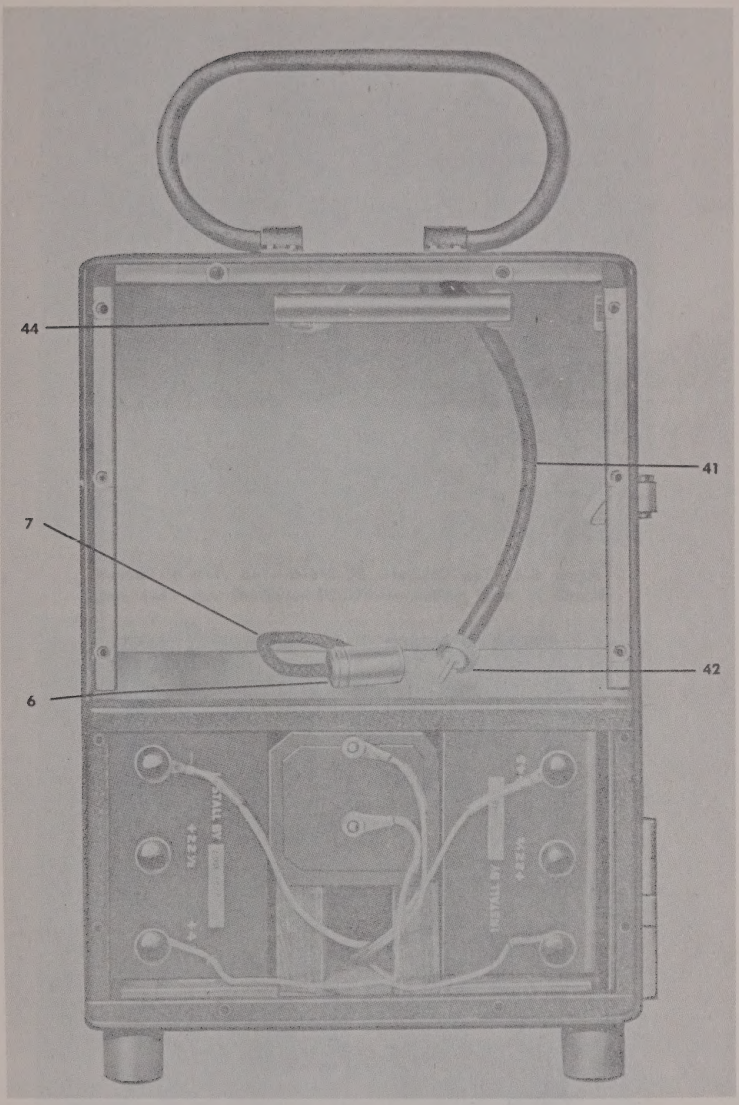


Figure 5-3. Test Oscillator BC-376-H—Cabinet Open

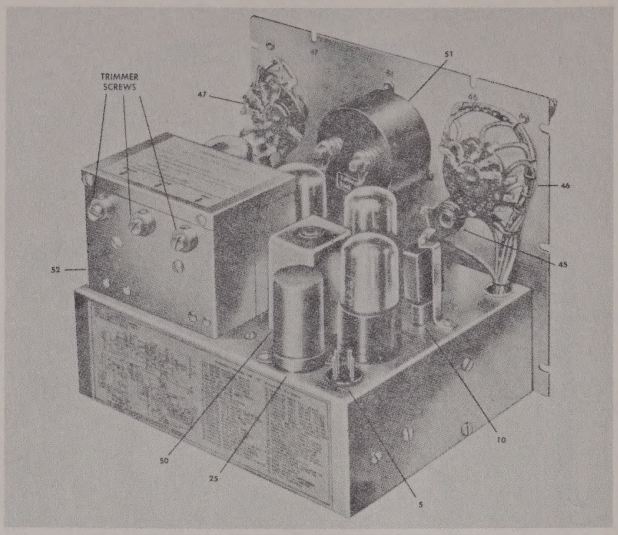


Figure 5-4. Test Oscillator BC-376-H—Top View of Chassis

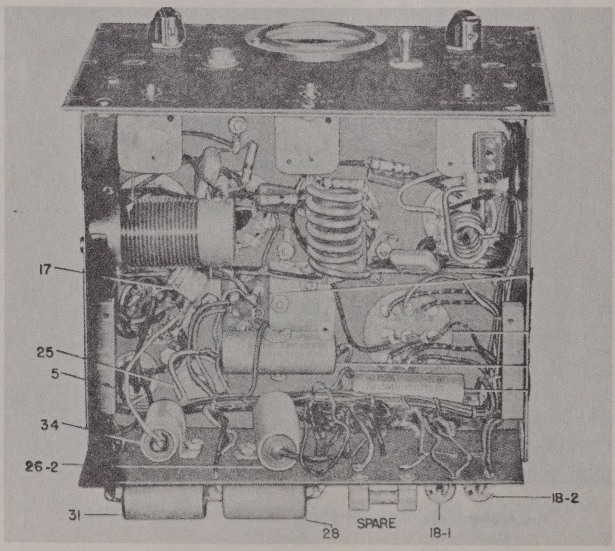


Figure 5-5. Test Oscillator BC-376-H—Chassis, Sub-Panel Removed

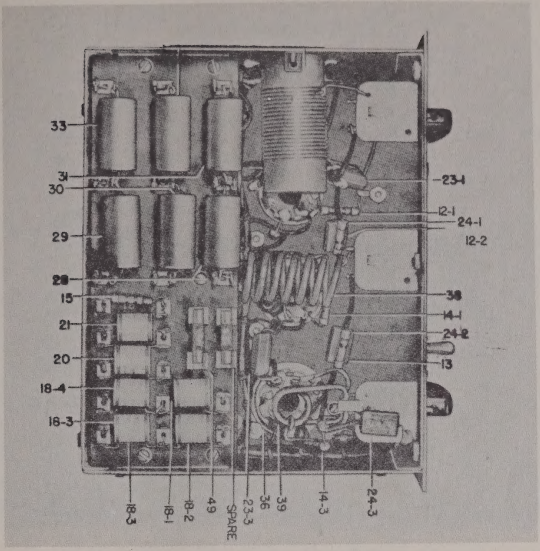


Figure 5-6. Test Oscillator BC-376-H—Bottom View of Chassis

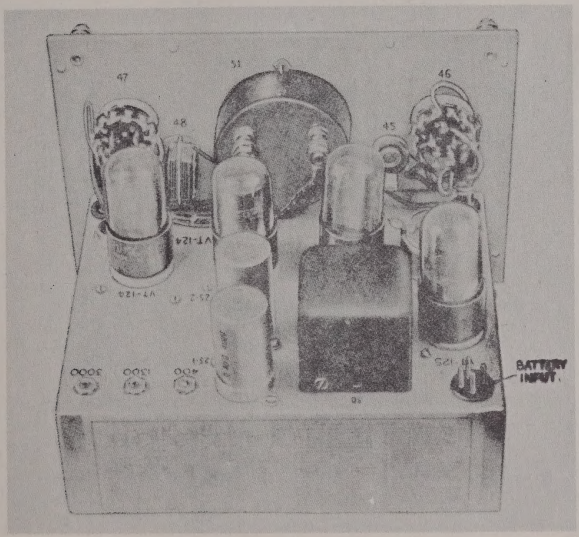


Figure 5-7. Test Oscillator BC-376-E—Chassis and Panel Assembly

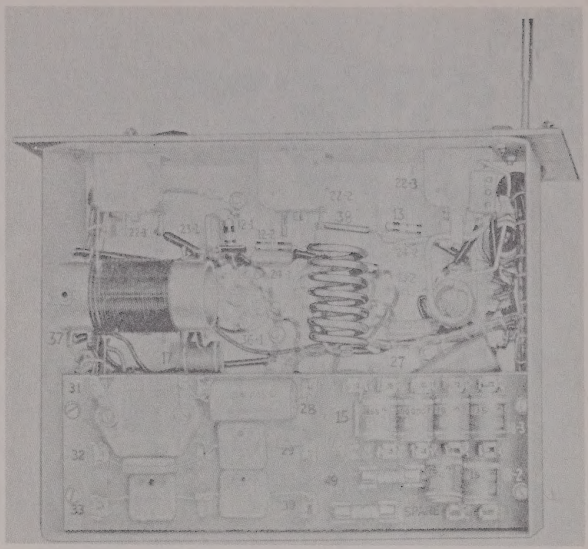


Figure 5-8. Test Oscillator BC-376-E—Bottom View of Chassis

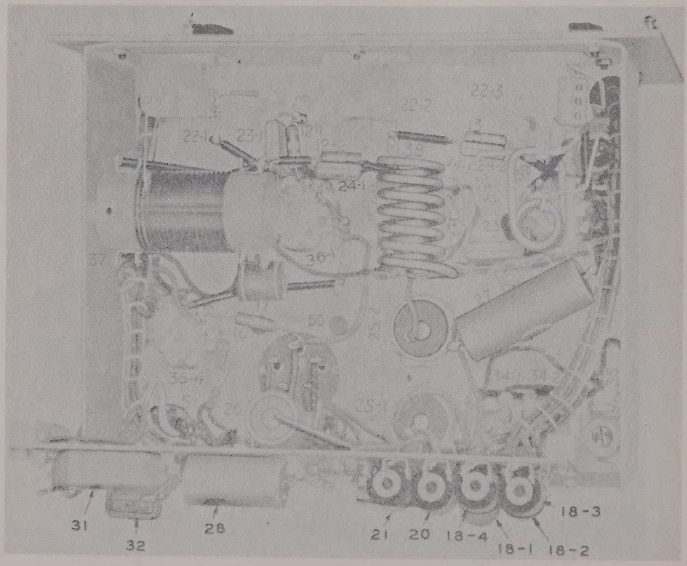


Figure 5-9. Test Oscillator BC-376-E—Bottom View of Chassis, Panel Removed

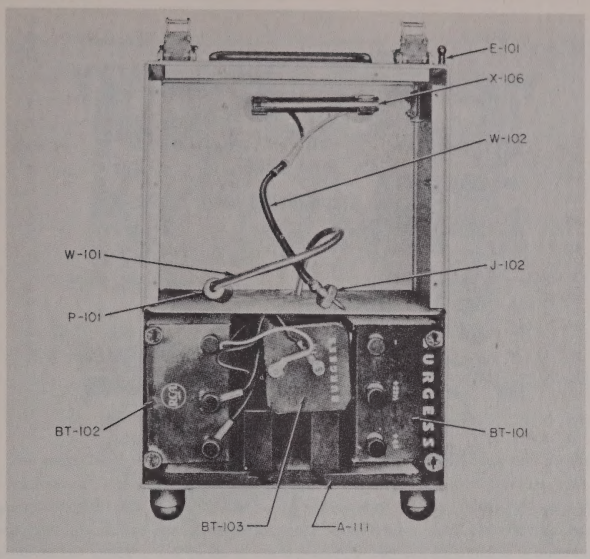


Figure 5-10. Test Oscillator BC-376-K—Cabinet Open

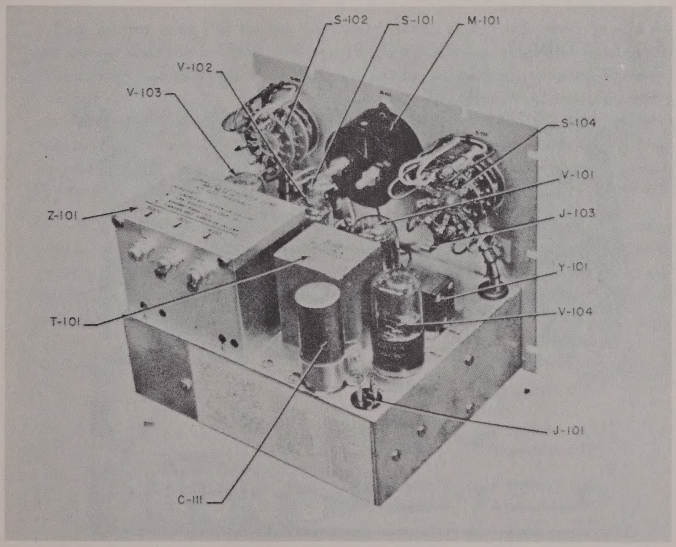


Figure 5-11. Test Oscillator BC-376-K—Top View of Chassis

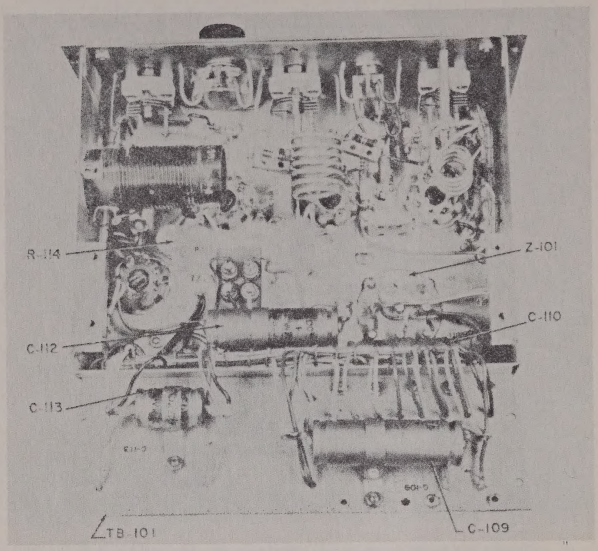


Figure 5-12. Test Oscillator BC-376-K—Chassis, Sub-Panel Removed

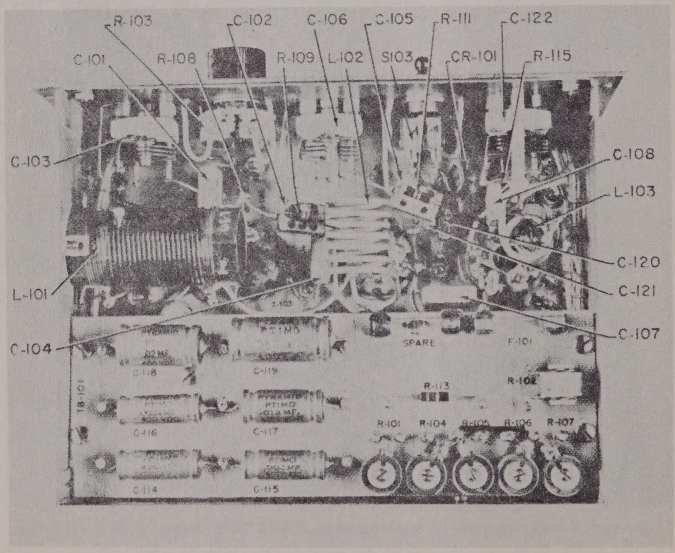


Figure 5-13. Test Oscillator BC-376-K—Bottom View of Chassis

SECTION VI
TABLE OF REPLACEABLE PARTS

Introduction

The parts listed in this table do not constitute a complete electrical and mechanical breakdown of the equipment. The table lists all electrical parts together with such operative mechanical parts as are subject to loss or failure, with the exception of structural and minor parts such as standard bolts, screws, nuts, and the like. In some instances individual detail parts of a sub-assembly may not be listed as separate items, since replacement of such items is impractical.

Ordering of Spare Parts

Each Service using this list has established certain depots and service groups for the storage and issue of spare parts to its organizations requiring them. The regulations of each Service should be studied to determine the method and source for requisitioning spare parts. The information in this list, as to manufacturer's or contractor's name, type, model, or drawing number, is not to be interpreted as authorization to field agencies to attempt to purchase identical or comparable spare parts directly from the manufacturer or a wholesale or retail store except under emergency conditions as covered by existing regulations of the Service concerned.

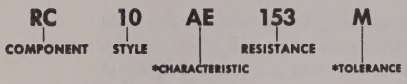
U. S. Army Personnel: This table is for information *only* and is not to be used as a basis for requisitioning parts. Authorities for obtaining maintenance items are as follows: 1. For using organizations: applicable Service publications of the 00-30 series of AAF Technical Orders. 2. For higher maintenance and supply echelons: applicable Service publications of the 08-55 series of AAF Technical Orders.

JOINT ARMY-NAVY TYPE DESIGNATION CODES FOR ELECTRICAL COMPONENTS

INTRODUCTION: Fixed and variable resistors and fixed capacitors manufactured under JAN specifications may be labeled with a *type designation code* instead of a color code or actual electrical value. For resistors and capacitors marked with the JAN type designation code, electrical values and other data can be determined by consulting the following information.

RESISTORS

FIXED, COMPOSITION



COMPONENT: RC signifies *fixed, composition resistor.*

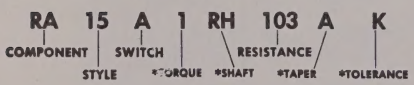
STYLE: A two-digit symbol indicates power rating and physical size.

Resistor style	Wattage
RC10, RC15, RC16	¼ WATT
RC20, RC21, RC25	½ WATT
RC30, RC31, RC35, RC38	1 WATT
RC40, RC41, RC45	2 WATTS
RC65	4 WATTS
RC75, RC76	5 WATTS

RESISTANCE: A three-digit symbol indicates the resistance value in ohms. The first two digits give the first two figures of the resistance value; the third digit gives the number of zeros which follow the first two figures.

RESISTORS

VARIABLE, WIRE-WOUND



COMPONENT: RA signifies *variable, wire-wound resistor.*

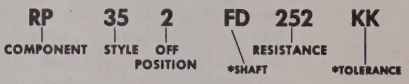
STYLE: A two-digit symbol indicates power rating and physical size and shape.

SWITCH: Symbol A indicates no switch. Symbol B indicates a switch turned ON at start of clockwise rotation.

RESISTANCE: A three-digit symbol indicates the resistance value in ohms. The first two digits give the first two figures of the resistance value; the final digit gives the number of zeros which follow the first two figures. The letter *R* may be substituted to represent a decimal point; but when *R* is used, the last digit of the group becomes significant.

RHEOSTATS

WIRE-WOUND, POWER-TYPE



COMPONENT: RP signifies all *rheostats.*

STYLE: Same as for variable, wire-wound resistors.

OFF POSITION:

Numeral	OFF position
1	None.
2	At end of counterclockwise rotation.
3	At end of clockwise rotation.

RESISTANCE: Same as for variable, wire-wound resistors.

*Items starred are of interest primarily to depot and higher echelon repair personnel.

CAPACITORS

FIXED MICA-DIELECTRIC

CM	20	B	511	K
COMPONENT	CASE	*CHARACTERISTIC	CAPACITANCE	*TOLERANCE

COMPONENT: CM signifies *fixed, mica-dielectric capacitor.*

CASE: A two-digit symbol identifies a physical case size and shape.

CAPACITANCE: A three-digit symbol indicates the capacitance value in micromicrofarads. The first two digits give the first two figures of the capacitance value; the final digit gives the number of zeros which follow the first two figures. When more than two significant figures are required, additional digits may be used, the last digit always indicating the number of zeros.

D-C WORKING VOLTAGE FOR CAPACITANCE RANGE

Case	Capacitance range	Vdcw
CM20	5-510 mmf	500
CM25	5-1,000 mmf	500
CM30	470-3,300 mmf	500
CM35	470-6,200 mmf	500
	6,800-10,000 mmf	500
CM40	3,300-8,200 mmf	500
	9,100-10,000 mmf	300

NOTE: Working voltages for capacitors above CM40 are stamped on the case.

The d-c working voltage of a capacitor can be determined from the above table when the case size and value of capacitance are known.

CAPACITORS

FIXED, MOLDED, PAPER-DIELECTRIC†

CN	36	A	302
COMPONENT	CASE	*CHARACTERISTIC	CAPACITANCE

COMPONENT: CN signifies *fixed, molded, paper-dielectric capacitor.*

CASE: Same as for fixed, mica-dielectric capacitors.

CAPACITANCE: A three-digit symbol indicates the capacitance value in micromicrofarads. The first two digits give the first two figures of the capacitance value; the third digit gives the number of zeros which follow the first two figures.

D-C WORKING VOLTAGE FOR CAPACITANCE RANGE

Case	Capacitance	Vdcw
CN35	3,000 mmf	800
	6,000 mmf	600
	10,000 mmf	400
CN36	3,000 mmf	400
	6,000 mmf	400
	10,000 mmf	300
CN40	3,000 mmf	400
	6,000 mmf	300
	10,000 mmf	300
CN41	3,000 mmf	600
	6,000 mmf	600
	10,000 mmf	400

The d-c working voltage of a capacitor can be determined from the above table when the case size and value of capacitance are known.

CAPACITORS

FIXED, CERAMIC-DIELECTRIC

CC	20	AH	100	G
COMPONENT	CASE	*CHARACTERISTIC	CAPACITANCE	*TOLERANCE

COMPONENT: CC signifies *fixed, ceramic-dielectric capacitor.*

CASE: Same as for fixed, mica-dielectric capacitors.

CAPACITANCE: Same as for fixed, molded, paper-dielectric capacitors.

NOTE: All fixed, ceramic-dielectric capacitors have a working voltage of 500 volts, d-c.

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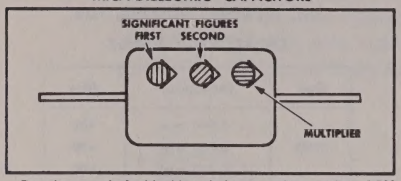
*Items starred are of interest primarily to depot and higher echelon repair personnel.

†This is not a JAN specification. These capacitors are covered by AWS C75/221.

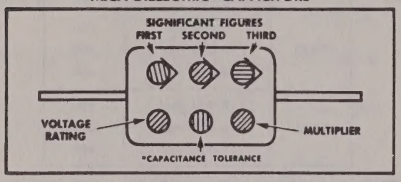
CAPACITOR COLOR CODES

RMA 3-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS

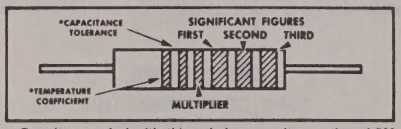


Capacitors marked with this code have a voltage rating of 500 volts.

RMA 6-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS



RMA COLOR CODE FOR TUBULAR CERAMIC-DIELECTRIC CAPACITORS



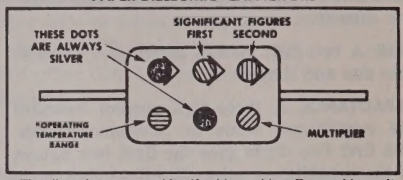
Capacitors marked with this code have a voltage rating of 500 volts.

RMA Radio Manufacturers Association JAN Joint Army-Navy

Note These color codes give all capacitances in micromicrofarads.

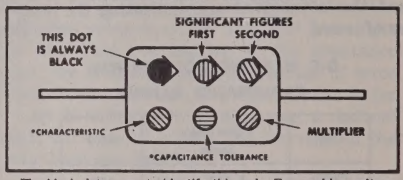
*Items marked with an asterisk are of interest primarily to depot and higher echelon repair personnel

JAN 6-DOT COLOR CODE FOR PAPER-DIELECTRIC CAPACITORS



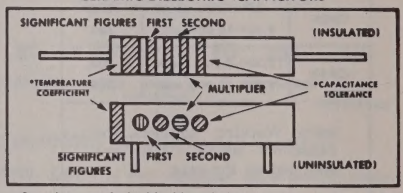
The silver dots serve to identify this marking. For working voltages see JAN type designation code.

JAN 6-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS



The black dot serves to identify this code. For working voltages see JAN type designation code.

JAN COLOR CODE FOR FIXED CERAMIC-DIELECTRIC CAPACITORS

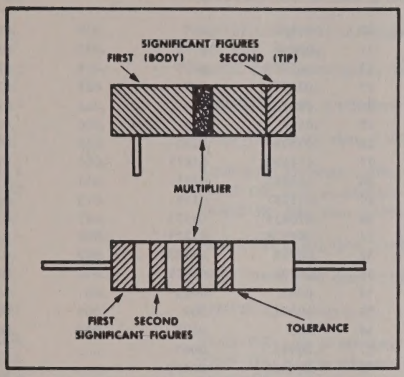


Capacitors marked with this code have a voltage rating of 500 volts. Either the band or dot code may be used.

COLOR	SIGNIFICANT FIGURE	MULTIPLIER			RMA VOLTAGE RATING
		RMA MICA-AND CERAMIC-DIELECTRIC	JAN MICA-AND PAPER-DIELECTRIC	JAN CERAMIC-DIELECTRIC	
BLACK	0	1	1	1	
BROWN	1	10	10	10	100
RED	2	100	100	100	200
ORANGE	3	1,000	1,000	1,000	300
YELLOW	4	10,000			400
GREEN	5	100,000			500
BLUE	6	1,000,000			600
VIOLET	7	10,000,000			700
GRAY	8	100,000,000		0.01	800
WHITE	9	1,000,000,000		0.1	900
GOLD		0.1	0.1		1,000
SILVER		0.01	0.01		2,000
NO COLOR					500

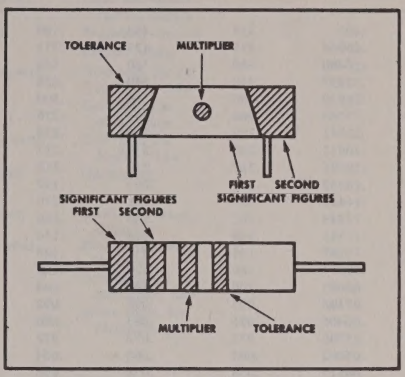
RESISTOR COLOR CODES

RMA COLOR CODE FOR FIXED COMPOSITION RESISTORS



Insulated fixed composition resistors with axial leads are designated by a natural tan background color. Non-insulated fixed composition resistors with axial leads are designated by a black background color.

JAN COLOR CODE FOR FIXED COMPOSITION RESISTORS



Resistors with axial leads are insulated. Resistors with radial leads are uninsulated.

COLOR	SIGNIFICANT FIGURE	MULTIPLIER	TOLERANCE (PERCENT)
BLACK	0	1	
BROWN	1	10	
RED	2	100	
ORANGE	3	1,000	
YELLOW	4	10,000	
GREEN	5	100,000	
BLUE	6	1,000,000	
VIOLET	7	10,000,000*	
GRAY	8	100,000,000*	
WHITE	9	1,000,000,000*	
GOLD		0.1*	5
SILVER		0.01*	10
NO COLOR			20

*JAN ONLY

Example: A 50,000-ohm resistor with a standard tolerance of 20 percent (no color) would be indicated by a green ring (5), a black ring (0), and an orange ring (000)

RMA: Radio Manufacturers Association
JAN: Joint Army-Navy

TABLES SHOWING THE DIFFERENCES BETWEEN WIRE GAUGES

#	Brown & Sharpe	Old English or London	Stubs' or Birmingham	New British Standard
0000	.460	.454	.454	.400
000	.40964	.425	.425	.372
00	.36480	.380	.380	.348
0	.32495	.340	.340	.324
1	.28930	.300	.300	.300
2	.25763	.284	.284	.276
3	.22942	.259	.259	.252
4	.20431	.238	.238	.232
5	.18194	.220	.220	.212
6	.16202	.203	.203	.192
7	.14428	.180	.180	.176
8	.12849	.165	.165	.160
9	.11443	.148	.148	.144
10	.10189	.134	.134	.128
11	.09074	.120	.120	.116
12	.08081	.109	.109	.104
13	.07196	.095	.095	.092
14	.06408	.083	.083	.080
15	.05706	.072	.072	.072
16	.05082	.065	.065	.064
17	.04525	.058	.058	.056
18	.04030	.049	.049	.048
19	.03589	.040	.042	.040
20	.03196	.035	.035	.036
21	.02846	.0315	.032	.032
22	.025347	.0295	.028	.028
23	.022571	.027	.025	.024
24	.0201	.025	.022	.022
25	.0179	.023	.020	.020
26	.01594	.0205	.018	.018
27	.014195	.01875	.016	.0164
28	.012641	.0165	.014	.0148
29	.011257	.0155	.013	.0134
30	.010025	.01375	.012	.0126
31	.008928	.01225	.010	.0116
32	.00795	.01125	.009	.0108
33	.00708	.01025	.008	.0100
34	.0063	.0095	.007	.0092
35	.00561	.009	.005	.0084
36	.005	.0075	.004	.0076
37	.00445	.0065	.....	.....
38	.003965	.00575	.....	.....
39	.003531	.005	.....	.....
40	.003144	.0045	.....	.....

TABLE OF REPLACEABLE PARTS

MODEL: TEST OSCILLATOR BC-376-A

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
5		PLUG, connector: male.	Battery connector		
6		PLUG, connector: female.	Battery connector		
7		CABLE, 4-wire: 20 inch.	Battery cable		
8		BATTERY BA-35: 1.5 volts.	Filament current supply		
9-1		BATTERY BA-36: 45 volts.	Plate and screen current supply		
9-2		BATTERY BA-36: same as reference 9-1.	Plate and screen current supply		
10		CRYSTAL: quartz; 12.5 megacycles.	Frequency control		
11		SOCKET: 5-prong.	Crystal holder		
12-1		RESISTOR: 100,000 ohms ±10%; ½ watt.	Grid leak for r-f oscillator tube		
12-2		RESISTOR: same as reference 12-1.	Grid leak for tripler tube		
13		RESISTOR: 50,000 ohms ±10%; ½ watt.	Grid leak for doubler tube		
14-1		RESISTOR: 250 ohms ±10%; ½ watt.	Decoupling		
14-2		RESISTOR: same as reference 14-1.			
15		RESISTOR: 5000 ohms ±10%; ½ watt.	Doubler voltage dropping		
16		RESISTOR: 25,000 ohms ±10%; ½ watt.	Modulator screen dropping		
17		RESISTOR: 50,000 ohms ±1%.	Grid leak for modulator tube		
18-1		RESISTOR: 15 ohms ±1%.	Meter shunt for current ranges		
18-2		RESISTOR: same as reference 18-1.			
18-3		RESISTOR: same as reference 18-1.			
18-4		RESISTOR: same as reference 18-1.			
19		RESISTOR: external meter resistor.	Compensating resistor for meter		
20		RESISTOR: 100,000 ohms ±1%.	Meter multiplier for 100-volt range		
21		RESISTOR: 1865 ohms ±1%.	Meter multiplier for 2-volt range		
22-1		CAPACITOR: 27 micromicrofarads.	R-F tuning		
22-2		CAPACITOR: same as reference 22-1.			
22-3		CAPACITOR: same as reference 22-1.			
23-1		CAPACITOR: mica; .002 microfarad ±10%.	R-F bypass		
23-2		CAPACITOR: same as reference 23-1.			
23-3		CAPACITOR: same as reference 23-1.			
24-1		CAPACITOR: mica; .0001 microfarad ±10%.	Grid capacitor for tripler tube		
24-2		CAPACITOR: same as reference 24-1.	Grid capacitor for doubler tube		
24-3		CAPACITOR: same as reference 24-1.	R-F bypass for doubler screen		
25-1		CAPACITOR: paper; .9 microfarad ±5%; 400 vdcw.	A-F bypass		
25-2		CAPACITOR: same as reference 25-1.	R-F bypass		
26		CAPACITOR: paper; .50 microfarad ±5%; 400 vdcw.	A-F bypass		
27		CAPACITOR: paper; .25 microfarad ±5%; 400 vdcw.	Headset series for d-c blocking		
28		CAPACITOR: paper; .054 microfarad −0 +10%; 400 vdcw.	Modulator plate tuning capacitor for 400 cycles per second		

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-A

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
29		CAPACITOR: mica; .0085 microfarad —0 +10%; 600 vdcw.	Modulator plate tuning capacitor for 1300 cycles per second		
30		CAPACITOR: mica; .0029 microfarad —0 +10%; 600 vdcw.	Modulator plate	Modulator plate tuning capacitor for 3000 cycles per second	
31		CAPACITOR: mica; .016 microfarad —0 +10%; 600 vdcw.	Modulator grid series for 400 cycles per second		
32		CAPACITOR: mica; .0042 microfarad —0 +10%; 600 vdcw.	Modulator grid series for 1300 cycles per second		
33		CAPACITOR: mica; .001 microfarad —0 +10%; 600 vdcw.	Modulator grid series for 3000 cycles per second		
34-1		CAPACITOR: mica; 660-2100 micromicrofarads.	Trimmer for modulator plate 400 cycles per second		
34-2		CAPACITOR: same as reference 34-1.	Trimmer for modulator plate 1300 cycles per second		
35		CAPACITOR: mica; 480-1640 micromicrofarads.	Trimmer for modulator plate for 3000 cycles per second		
36-1		SOCKET.	For crystal oscillator tube		
36-2		SOCKET: same as reference 36-1.	For tripler tube		
36-3		SOCKET: same as reference 36-1.	For doubler tube		
36-4		SOCKET: same as reference 36-1.	For modulator tube		
37		COIL, inductance: 12.5 megacycles.	Crystal stage tuning coil		
38		COIL, inductance: 37.5 megacycles.	Tripler stage tuning coil		
39		COIL, inductance: 75 megacycles.	Doubler stage tuning coil		
40		RADIATOR: 43.5 inch telescoping whip antenna.	Antenna for r-f signal output		
41		LINE, transmission: flexible.	Connects r-f output to antenna		
42		PLUG, transmission line: male.	Transmission line connector		
43		PLUG, transmission line: female.	Transmission line connector		
44		SOCKET, radiator.	Antenna		
45		JACK JK-34-A.	Headset connector for audio		
46		SWITCH: 3-pole; 4-position.	Modulation frequency selector		
47		SWITCH: 2-pole; 6-position.	Circuit selector for meter		
48		SWITCH: double-pole, single-throw; toggle.	Battery switching		
49		FUSE: 1/8 ampere.	Meter, battery overload protector		
50		TRANSFORMER, modulation.	Audio oscillator and modulation		

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-A

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
51		AMMETER: 0-1 milliampere; direct current.	Indicator for currents and voltages		
	2J1A5GT —— ——	TUBE JAN-1A5GT: filament type output pentode.	Crystal oscillator		
	2J1A5GT —— ——	TUBE JAN-1A5GT: filament type output pentode.	Frequency tripler		
	2J1A5GT —— ——	TUBE JAN-1A5GT: filament type output pentode.	Frequency doubler		
	2J1C5GT —— ——	TUBE JAN-1C5GT: filament type output pentode.	Audio oscillator		

MODEL: TEST OSCILLATOR BC-376-E

5		PLUG, connector: male.	Connects to battery connector, female	American Phenolic Corporation CP-45	G-W-3
6		SOCKET AND CABLE, connector: female.	Connects to batteries	Holyoke	G-W-4
8		BATTERY BA-35: 1.5 volt.	Filament supply	Eveready or Burgess #4FH	
9-1		BATTERY BA-36: 45 volt.	Plate supply	Eveready	
9-2		BATTERY BA-36: same as reference 9-1.	Plate supply		
10		CRYSTAL, quartz: 12.5 megacycles; Bliley type No. 2.	Frequency stabilizer		G-C-1
11		SOCKET: 5-prong.	Socket for crystal	American Phenolic Corporation type SS-5	G-S-6
12-1		RESISTOR: carbon; 100,000 ohms; ½ watt.	Oscillator grid	I.R.C. Signal Corps #RS-150	G-R-9
12-2		RESISTOR: same as reference 12-1.	Tripler grid		
13		RESISTOR: carbon; 50,000 ohms; ½ watt.	Doubler grid	I.R.C. Signal Corps #RS-131	G-R-8
14-1		RESISTOR: carbon; 250 ohms; ½ watt.	Filter for doubler		G-R-5
14-2		RESISTOR: same as reference 14-1.	Filter for tripler		G-R-5
15		RESISTOR: carbon; 5000 ohms; ½ watt.	Filter resistor	I.R.C. Signal Corps #RS-128	G-R-6
16		RESISTOR: carbon; 25,000 ohms; ½ watt.	Screen dropping	I.R.C. Signal Corps #RS-157	G-R-7
17		RESISTOR: 50,000 ohms ±1%.	Biasing	Davenohm type AWT	G-R-4
18-1		RESISTOR: 15 ohms ±1%.	Meter shunt for current ranges	Davenohm type AWT	G-R-1
18-2		RESISTOR: same as reference 18-1.	Meter shunt		
18-3		RESISTOR: same as reference 18-1.	Meter shunt		
18-4		RESISTOR: same as reference 18-1.	Meter shunt		
20		RESISTOR: 100,000 ohms ±1%.	Meter multiplier for 100-voltage	Davenohm type AWT	

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-E

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
21		RESISTOR: 1865 ohms ±1%.	Meter multiplier for 2-volt range	Davenohm type AWT	G-R-3
22-1		CAPACITOR: 25 micromicrofarads.	R-F tuning capacitor for tripler stage	Bud #LC-1681	G-C-2
22-2		CAPACITOR: same as reference 22-1.	R-F tuning capacitor for doubler stage		
22-3		CAPACITOR: same as reference 22-1.	R-F tuning capacitor for antenna		
23-1		CAPACITOR: mica; .002 microfarad ±20%.	Screen bypass for oscillator	Cornell-Dubilier type "W-1"	G-C-10
23-2		CAPACITOR: same as reference 23-1.	Screen bypass for tripler		
23-3		CAPACITOR: same as reference 23-1.	Heater bypass for doubler		
24-1		CAPACITOR: mica; .0001 microfarad ±20%.	Grid coupling for tripler	Cornell-Dubilier type "O"	G-C-9
24-2		CAPACITOR: same as reference 24-1.	Grid coupling for doubler		
24-3		CAPACITOR: same as reference 24-1.	Screen bypass for doubler		
25-1		CAPACITOR: .9 microfarad −6 +14%; 400 volts.	Screen bypass for modulator	Electrical Utilities Co.	G-C-3
25-2		CAPACITOR: same as reference 25-1.	Audio bypass for modulator		
26		CAPACITOR: .4 microfarad −6 +14%; 400 vdcw.	Audio bypass for doubler plate	Electrical Utilities Co. #10436	G-C-4
27		CAPACITOR: .25 microfarad −6 +14%; 400 volts.	Headset coupling	Electrical Utilities Co. #10435	G-C-5
28		CAPACITOR: .054 microfarad ±1%; 400 volts.	Tank capacitor for 400 cycles per second	Electrical Utilities Co. #10440	G-C-6
29		CAPACITOR: mica; .009 microfarad ±1%.	Tank capacitor for 1300 cycles per second	Cornell-Dubilier "W-1"	G-C-13
30		CAPACITOR: mica; .002 microfarad ±1%; 600 volts.	Tank capacitor for 3000 cycles per second	Cornell-Dubilier "W-1"	G-C-10
31		CAPACITOR: mica; .016 microfarad ±2%.	Audio grid coupling for 400 cycles per second	Cornell-Dubilier type 91S	G-C-11
32		CAPACITOR: mica; .0042 microfarad ±2%.	Audio grid coupling for 1300 cycles per second	Cornell-Dubilier "W-1"	G-C-12
33		CAPACITOR: mica; .002 microfarad ±2%.	Audio grid coupling for 3000 cycles per second	Cornell-Dubilier	G-C-10
34-1		CAPACITOR: mica; 660-2100 micromicrofarads.	Audio tank trimmer for 400 cycles per second	Electromotive Alsimag #35 base	
34-2		CAPACITOR: same as reference 34-1.	Audio tank trimmer for 1300 cycles per second		

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-E

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
35		CAPACITOR: mica; 480-1640 micromicrofarads.	Audio tank trimmer for 3000 cycles per second	Electromotive Alsimag #35 base	G-C-7
36-1		SOCKET: octal.	For r-f oscillator tube	Amphenol type SS-8	G-S-7
36-2		SOCKET: same as reference 36-1.	For tripler tube		
36-3		SOCKET: same as reference 36-1.	For doubler tube		
36-4		SOCKET: same as reference 36-1.	For modulator tube		
37		COIL: 12.5 megacycles.	Crystal stage tuning coil	Sickles	G-T-2
38		COIL: 37.5 megacycles.	Tripler stage tuning coil	Emerson Radio	G-T-3
39		COIL: 75 megacycles.	Doubler stage tuning coil	Emerson Radio	G-T-4
40		RADIATOR: 43.5 inch; telescoping; whip antenna.	Antenna for r-f signal output	Radiart type #15595A	G-H-1
41		LINE, transmission: ¼ inch; o.d. co-axial cable.	Connects r-f output to antenna	Amphenol	Part of G-W-5
42		PLUG, transmission line: male.	Connects to flexible transmission line	Amphenol 80 C	Part of G-W-5
43		CONNECTOR, transmission line.	Chassis connector to transmission line plug	Amphenol 80 C	G-S-4
44		SOCKET, radiator.	Telescoping antenna receptacle	Emerson Radio	G-X-1
45		JACK JK-34-A.	Headset connection for audio	Mallory	G-S-5
46		SWITCH: 3 pole; 4 position.	Modulation selector	Yaxley #3234	G-S-1
47		SWITCH: 2 pole; 6 position.	Circuit selector for meter	Yaxley #3226	G-S-2
48		SWITCH: double-pole single-throw; toggle.	Battery switching	Arrow, Hart and Hegeman #20902-N	G-S-3
49		FUSE: ⅛ ampere.	Meter, battery overload protector	Littelfuse #1004	G-F-4
50		TRANSFORMER, modulation: audio frequency.	Inductively couples the output of the modulator stage to the plate circuit of the doubler	Emerson Radio	G-T-1
51		AMMETER: 0-1 milliampere.	Indicator for currents and voltages	Weston type 301	G-X-2
	2J1A5GT —— ——	TUBE JAN-1A5GT: filament type output pentode.	Crystal oscillator		
	2J1A5GT —— ——	TUBE JAN-1A5GT: filament type output pentode.	Frequency tripler		
	2J1A5GT —— ——	TUBE JAN-1A5GT: filament type output pentode.	Frequency doubler		
	2J1C5GT —— ——	TUBE JAN-1C5GT: filament type output pentode.	Audio oscillator		

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-F AND BC-376-G

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
5		PLUG, connector: male.	Battery connector	Amphenol	
6		PLUG, connector: female.	Battery connector		
7		CABLE, 4-wire: 20-inch battery wire cable.	Battery cable		
8		BATTERY BA-35: 1.5 volts.	Filament current supply		
9-1		BATTERY BA-36: 45 volts.	Plate and screen current supply		
9-2		BATTERY BA-36: same as reference 9-1.	Plate and screen current supply		
10		CRYSTAL, quartz: 12.5 megacycles.	Frequency control		
11		SOCKET: 5-prong; ceramic.	Crystal holder	Amphenol #SS-5	
12-1		RESISTOR: 100,000 ohms; ½ watt; carbon.	Grid leak for r-f oscillator tube	I.R.C.	
12-2		RESISTOR: same as reference 12-1.	Grid leak for tripler tube		
13-1		RESISTOR: 50,000 ohms; ½ watt; carbon.	Grid leak for doubler tube	I.R.C.	
13-2		RESISTOR: same as reference 13-1.	Grid leak for modulator tube		
14		RESISTOR: 250 ohms; ½ watt; carbon.	Doubler plate decoupling	I.R.C.	Sig-B-106
15		RESISTOR: 7,500 ohms; ½ watt.	Doubler plate dropping	I.R.C. BT-½	
16		RESISTOR: 25,000; ½ watt; carbon.	Screen dropping	I.R.C.	
18-1		RESISTOR: 15 ohms ±1%.	Meter shunt for current ranges	Atlas type I.I.G.	
18-2		RESISTOR: same as reference 18-1.			
18-3		RESISTOR: same as reference 18-1.			
18-4		RESISTOR: same as reference 18-1.			
20		RESISTOR: 100,000 ohms ±1%.	Meter multiplier for 100-volt range	Precision type R	
21		RESISTOR: 1865 ohms ±1%.	Meter multiplier for 2-volt range	Atlas type I.I.G.	
22-1		CAPACITOR, variable: 25 micromicrofarads.	R-F tuning for tripler stage	Hammerlund #APC-25	
22-2		CAPACITOR: same as reference 22-1.	R-F tuning for doubler stage		
22-3		CAPACITOR: same as reference 22-1.	R-f tuning for antenna		
23-1		CAPACITOR, fixed: .002 microfarad ±10%; mica.	R-f bypass	Solar MWBW1233-614	
23-2		CAPACITOR: same as reference 23-1.			
23-3		CAPACITOR: same as reference 23-1.			
23-4		CAPACITOR: same as reference 23-1.			
24-1		CAPACITOR: mica; .0001 microfarad ±10%.	Grid capacitor for tripler tube	Solar MOBW1416-614	
24-2		CAPACITOR: same as reference 24-1.	Grid capacitor for doubler tube		
24-3		CAPACITOR: same as reference 24-1.	Screen bypass for doubler tube		
24-4		CAPACITOR: same as reference 24-1.	Plate bypass for doubler tube		
24-5		CAPACITOR: same as reference 24-1.	Modulator grid r-f bypass		

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-F AND BC-376-G

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
25-1		CAPACITOR: paper; .9 microfarad +6 −10%; 400 vdcw.	Modulator plate a-f bypass	Electrical Utilities	
25-2		CAPACITOR: same as reference 25-1.			
26		CAPACITOR: paper; .4 microfarad ±5%; 400 vdcw.	A-F bypass	Electrical Utilities #10436	
27		CAPACITOR: paper; .25 microfarad ±5%; 400 vdcw.	Headset series for d-c blocking	Electrical Utilities	
28		CAPACITOR: paper; .054 microfarad −0 +10%; 400 vdcw.	Modulator plate tuning for 400 cycles per second	Electrical Utilities #10440	
29		CAPACITOR: mica; .009 microfarad −0 +10%; 600 vdcw.	Modulator plate tuning for 1300 cycles per second	Solar type MWBW1247-5	
30		CAPACITOR: mica; .002 microfarad −0 +10%; 600 vdcw.	Modulator plate tuning for 3000 cycles per second	Solar type MWBW-1233-5	
31		CAPACITOR: mica; .015 microfarad −0 +10%; 600 vdcw.	Modulator grid capacitor for 400 cycles per second	Solar type XMBW	
32		CAPACITOR: mica; .004 microfarad −0 +10%; 600 vdcw.	Modulator grid capacitor for 1300 cycles per second	Solar type MWBW1237-5	
33		CAPACITOR: mica; .002 microfarad −0 +10%; 600 vdcw.	Modulator grid capacitor for 3000 cycles per second	Solar type MWBW1233-5	
34-1		CAPACITOR, variable: 660-2100 micro-microfarads.	Padder for modulator frequency control for 400 cycles per second	Mallory #CTZ958	
34-2		CAPACITOR: same as reference 34-1.	Padder for modulator frequency control for 1300 cycles per second		
35		CAPACITOR, variable: 480-1640 micro-microfarads.	Padder for modulator frequency control for 3000 cycles per second	Mallory #CTZ957	
36-1		SOCKET: ceramic; octal.	Socket for crystal tube	Amphenol #SS8	
36-2		SOCKET: same as reference 36-1.	Socket for tripler tube		
36-3		SOCKET: same as reference 36-1.	Socket for doubler tube		
36-4		SOCKET: same as reference 36-1.	Socket for modulator tube		
37		COIL: 12.5 megacycles.	Crystal stage tuning coil		
38		COIL: 37.5 megacycles.	Tripler stage tuning coil		A-102
39		COIL: 75 megacycles.	Doubler stage tuning coil		A-1015
40		RADIATOR: 43.5 inch telescoping whip antenna.			
41		LINE, transmission: flexible.	Line for connecting r-f output to radiator		

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-F AND BC-376-G

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
42		PLUG, transmission line; male.	Transmission line connector		
43		PLUG, transmission line: female.	Transmission line connector		
44		SOCKET, radiator.	Connector for radiator	Amphenol #80 C	
45		JACK JK-34-A.	Headset connection for audio	Utah #2A	
46		SWITCH: 3-pole; 4-position.	Modulation frequency selector	Mallory #3134J	
47		SWITCH: meter; 2-pole; 6-position.	Circuit selector for meter		
48		SWITCH: battery; double pole, single throw; toggle.	Battery switching for "A" and "B" voltages	Arrow-Hart and Hegeman #20902	
49		FUSE: 1/8 ampere.	Meter, battery overload protector	Littelfuse #1004	
50		TRANSFORMER.	Audio oscillator and modulator	Trans. Eng. Co.	
51		AMMETER: 0-1 milliampere: direct current.	Indicator for currents and voltages	Simpson #23 special scale	
52		RHEOSTAT: 5000 ohms.	Audio frequency control	Centralab Midget N 114	
	2J1A5GT —— ——	TUBE JAN-1A5GT: filament type output pentode.	Crystal oscillator		
	2J1A5GT —— ——	TUBE JAN-1A5GT: filament type output pentode.	Frequency tripler		
	2J1A5GT —— ——	TUBE JAN-1A5GT: filament type output pentode.	Frequency doubler		
	2J1C5GT —— ——	TUBE JAN-1C5GT: filament type output pentode.	Audio oscillator		

MODEL: TEST OSCILLATOR BC-376-H

5	2Z7234	CONNECTOR, male contact: four round straight contacts; 3/4" OD x 13/16" lg overall; (5 amp, 115 v, molded black bakelite).	Battery connector	Amphenol type #CP4S Packard-Bell part/dwg	
6		CONNECTOR, female contact: plug; four round straight contacts; 3/8" OD x 1-3/16" lg overall; (5 amp, 115 v, molded black bakelite body enclosed in metal; cable opening 3/8" diam).	Battery connector	Amphenol type #MPF-4L Packard-Bell part/dwg #5-167	
7	3F3976H/C1	CABLE ASSEMBLY, battery: cloth jacketed; round; 1/4" diam; 20" lg; four #22 AWG stranded copper conductors each comprising seven #30 AWG strands; (cotton insulated conductors; coding as follows: red — B+, blue — B—, orange, — A+; brown — A—; Amphenol #MPF4L four terminal female connector at one end; four Shakeproof #2108-8 terminals at other end).	Power connection to set	Packard-Bell part/dwg #S-40-58	

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-H

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
10	2Z3499	CRYSTAL UNIT: single quartz wafer; 12,500 kc; transmitting AT harmonic out; Sig C crystal holder FT-243; 13/16" w x 1-1/8" h x 7/16" thk; (two mtg plugs .093" diam x 13/32" lg spaced 1/2"; part of Test Oscillator BC-376-H).	Frequency control	Standard coil type #HC-2 Packard-Bell part/dwg #138-3	
11–1		SOCKET, crystal: molded bakelite; 5/16" wd x 25/32" lg x 35/64" h overall; (mounts by means of 4-40 tapped hole; two female contacts spaced 0.493").	Mounts crystal	Cinch type #9816 Packard-Bell part/dwg #4-112	
11–2	2Z8761-6	SOCKET, tube: std octal; mica filled bakelite; 1-1/4" diam x 3/4" h overall; (mounts by means of one space ring and one snap ring furnished with socket on 1-1/4" diam mtg/s).	Mounts VT-124 crystal stage	Cinch #9610 Packard-Bell part/dwg #85-124	
11–3		SOCKET, tube: std octal; mica filled; same as Reference #11-2.	Mounts VT-124 tripler stage		
12		RESISTOR, fixed: composition; 120,000 ohms ±10%; 1/2 w; 0.468" max lg x 0.249" max diam; (bakelite insulation; two axial wire leads 1-1/2" lg).		RC-20-AE-124K IRC Packard-Bell part/dwg #47-999-4	JAN-R-11
12–1		RESISTOR, fixed: composition; 120,000 ohms ±10%; 1/2 w; same as Reference #12.	Grid resistor crystal stage		
12–2		RESISTOR, fixed; composition; 120,000 ohms ±10%; 1/2 w; same as Reference #12.	Grid leak to tripler		
13		RESISTOR, fixed: composition; 56,000 ohms ±10%; 1/2 w; 0.468" max lg x 0.249" max diam; (bakelite insulation; two axial wire leads 1-1/2" lg).	Grid leak resistor doubler stage	RC-20-AF-563K IRC Packard-Bell part/dwg #47-991-4	JAN-R-11
14		RESISTOR, fixed: composition; 270 ohms ±10%; 1/2 w; 0.468" max lg x 0.249" max diam; (bakelite insulation; two axial wire leads 1-1/2" lg).		RC-20-AE-271K IRC Packard-Bell part/dwg #47-935-4	JAN-R-11
14–1		RESISTOR, fixed: composition; 270 ohms ±10%; 1/2 w; same as Reference #14.	RF Stopping resistor tripler		
14-2		RESISTOR, fixed: composition; 270 ohms ±10%; 1/2 w; same as Reference #14.	RF Stopping resistor doubler		
15		RESISTOR, fixed: composition; 5600 ohms ±10%; 1/2 w; 0.468" max lg x 0.249" max diam; (bakelite insulation; two axial wire leads 1-1/2" lg).	Doubler stage voltage dropping	RC-20-AE-562K IRC Packard-Bell part/dwg #47-967-4	JAN-R-11
17	3Z6650-41	RESISTOR, fixed: wire wound; 50,000 ohms ±1%; 1/2 w; 19/32" lg x 1/2" diam; (wire enamel insulated; ceramic form; two radial wire leads 1-1/2" lg).	Grid leak modulator stage	Shallcross type #180 Packard-Bell part/dwg #47-178	
18	3Z6001E12	RESISTOR, fixed: wire wound; 15 ohms ±1%; 1/2 w; 1/2" diam; 5/8" lg; (ceramic form; two radial wire leads 1-1/2" lg).		Shallcross type #180 Packard-Bell part/dwg #47-176	
18–1		RESISTOR, fixed: wire wound; 15 ohms ±1%; 1/2 w; same as Reference #18.	Meter shunt for current, modulator		

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-H

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
18–2		RESISTOR, fixed: wire wound; 15 ohms ±1%; 1/2 w; same as Reference #18.	Meter shunt for current, doubler		
18–3		RESISTOR, fixed: wire wound; 15 ohms ±1%; 1/2 w; same as Reference #18.	Meter shunt for current, tripler		
18–4		RESISTOR, fixed: wire wound; 15 ohms ±1%; 1/2 w; same as Reference #18.	Meter shunt for current, crystal		
20	3Z6700-51	RESISTOR, fixed: wire wound; 100,000 ohms ±1%; 1/2 w; 19/32" lg x 1/2" diam; (wire enamel insulated; ceramic form; two radial wire leads 1-1/2" lg).	Meter multiplier for 100 V range	Shallcross type #180 Packard-Bell part/dwg #47-179	
21	3Z6180F5	RESISTOR, fixed: wire wound; 1865 ohms ±1%; 1/2 w; 19/32" lg x 1/2" diam; (wire enamel insulated; ceramic form; two radial wire leads 1-1/2" lg).	Meter multiplier for 2 V range	Shallcross type #180 Packard-Bell part/dwg #47-177	
22	3D9025V-16	CAPACITOR, variable: air dielectric; 5 to 25 mmf; 500 v RMS test; 1-5/16" lg x 15/16" w x 1-1/4" h overall; shaft 5/16" lg x .125" diam; (two 6/32 tapped mtg holes on 21/32" mtg/e; shaft slotted for screw driver tuning).		American Steel Pckg #8306 Packard-Bell part/dwg #2-220	
22–1		CAPACITOR, variable: air dielectric; 5 to 25 mmf; same as Reference #22.	Tuning for crystal stage		
22–2		CAPACITOR, variable: air dielectric; 5 to 25 mmf; same as Reference #22.	Tuning for tripler stage		
22–3		CAPACITOR, variable: air dielectric; 5 to 25 mmf; same as Reference #22.	Tuning for doubler stage		
23		CAPACITOR, fixed: mica; 2000 mmf ±10%; 500 vdcw; temperature co-efficient not specified; 53/64" max lg x 53/64" max wd x 9/32" max thk; (molded bakelite case; two #18 AWG wire leads 1-1/8" min lg).		CM30-A-202K Electro Motive #502J Packard-Bell part/dwg #2-219	JAN-C-5
23–1		CAPACITOR, fixed: mica; 2000 mmf ±10%; same as Reference #23.	Screen bypass crystal		
23–2		CAPACITOR, fixed: mica; 2000 mmf ±10%; same as Reference #23.	Screen bypass tripler		
23–3		CAPACITOR, fixed: mica; 2000 mmf ±10%; same as Reference #23.	Screen bypass doubler		
24		CAPACITOR, fixed; mica; 100 mmf ±10%; 500 vdcw; temperature co-efficient not specified; 1-1/16" max lg x 15/32" max wd x 7/32" max thk; molded bakelite case; two #20 AWG wire leads 1-1/8" min lg).		CM25-A-101-K Dubilier Packard-Bell part/dwg #2-218	JAN-C-5
24–1		CAPACITOR, fixed: mica; 100 mmf ±10%; 500 vdcw; same as Reference #24.	Grid capacitor crystal to doubler		
24–2		CAPACITOR, fixed: mica; 100 mmf ±10%; same as Reference #24.	Grid capacitor tripler to doubler		
24–3		CAPACITOR, fixed: mica; 100 mmf ±10%; same as Reference #24.	Screen bypass doubler		

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-H

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
25		CAPACITOR, fixed: paper; 900,000 mmf —10% +15%; 400 v; 1-13/16" h x 15/16" diam; special; (metal case hermetically sealed; mineral oil impregnation; one bare solder lug protuding from bottom center approx ¼"; case is common terminal; two mtg feet with #28 mtg holes on bottom of 1⅜" diam mtg/c).	AF bypass	Electric Utilities Co. #10434 Packard-Bell part/dwg #2-217	
26		CAPACITOR, fixed: paper; 400,000 mmf —10% +15%; 400 v; 2" lg x ¾" diam; special; (metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 1½" lg; mtg bracket on center of case, extended upward approx ¼" with one #28 mtg hole on 3/4" diam mtg/c).		Electric Utilities Co. #10436 Packard-Bell part/dwg #2-216	
26-1		CAPACITOR, fixed: paper; 400,000 mmf —10% +15%; same as Reference #26.	Screen bypass modulator		
26-2		CAPACITOR, fixed; paper; 400,000 mmf —10% +15%; same as Reference #26.	AF bypass		
27		CAPACITOR, fixed: paper; 250,000 mmf —10% +15%; 400 v; 2" lg x 3/4" diam; special; (metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 1-1/2" lg; mtg bracket on center of case, extended upward approx 1/4" with one #28 mtg hole on 3/4" diam mtg/c).	Headset series for DC stopping	Electric Utilities Co. #10435 Packard-Bell part/dwg #2-215	
28	3D458	CAPACITOR, fixed: paper; 58,000 mmf —0% +10%; 400 v; 1-5/16" lg x 5/8" diam; special; (metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 1-1/2" lg).	Modulator grid shunt for 400 cps	Electric Utilities Co. #10741 Packard-Bell part/dwg #2-214	
29	3DA4-20	CAPACITOR, fixed: paper, 4,000 mmf —0% +10%; 400 v; 1-5/16" lg x 5/8" diam; special; (metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 1-1/2" lg).	Modulator grid shunt for 3000 cps	Electric Utilities Co. #10738 Packard-Bell part/dwg #2-211	
30	3DA13-8	CAPACITOR, fixed: paper; 13,000 mmf —0% +10%; 400 v; 1-5/16" lg x 5/8" diam; special; (metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 1-1/2" lg).	Modulator grid for 1300 cps	Electric Utilities Co. #10739 Packard-Bell part/dwg #2-212	
31	3DA20-27	CAPACITOR, fixed: paper; 20,000 mmf —0% +10%; 400 v; 1-5/16" lg x 5/8" diam; special; (metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 1-1/2" lg).	Modulator grid series for 400 cps	Electric Utilities Co. #10740 Packard-Bell part/dwg #2-213	
32	3DA3.200	CAPACITOR, fixed: paper; 3200 mmf —0% +10%; 400 v; 1-5/16" lg x 5/8" diam; special; (metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 1-1/2" lg).	Modulator grid series for 1300 cps	Electric Utilities Co. #10737 Packard-Bell part/dwg #2-210	
33	3DA1.300	CAPACITOR, fixed: paper; 1300 mmf —0% +10%; 400 v; 1-5/16" lg x 5/8" diam; special; (metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 1-1/2" lg).	Modulator grid series for 3000 cps	Electric Utilities Co. #10736 Packard-Bell part/dwg #2-208	

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-H

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
34		CAPACITOR, fixed: paper; 2700 mmf —0% +20%; 400 v; 1-5/16" lg x 5/8" diam; special; (metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 1-1/2" lg; mtg bracket on center of case, extended upward approx 1/4", with one #28 mtg hole on 5/8" diam mtg/c).	Modulator grid RF bypass	Electric Utilities Co. #10776 Packard-Bell part/dwg #2-209	
35	2Z8668-1	SOCKET, tube: std octal; molded black bakelite; 1-1/4" diam x 3/4" h overall; (mounts by means of one space ring and one snap ring furnished with socket on 1-1/4" diam mtg/c).	Mounts VT-125 modulator stage	Cinch #9879 Packard-Bell part/dwg #85-126	
36	2Z8762.2	SOCKET, tube: std octal; ceramic; 1-1/4" diam x 3/4" h overall; (mounts by means of one space ring and one snap ring furnished with socket on 1-1/4" diam mtg/c).	Mounts VT-124 doubler	Amphenol #SS8 including rings Packard-Bell part/dwg #85-125	
37	3C1060	COIL, radio, RF: 12-1/2 mc; crystal stage; integral type; primary and secondary interwound; single layer wound; enamel insulation; 2-1/2" lg x 1-1/8" diam; (bakelite form JAN-P-13, form LTS-E-2, air core; mounts by two brackets each with single #28 hole on 1-11/16" mtg/c; primary windings brought out to two solder lug terminals on one end of form, secondary windings brought out to two solder lug terminals on other end of form; coil stamped #2700).	Crystal stage tuning coil	Standard Coil #2700 Packard-Bell part/dwg #3-0-610	
38	3C1061	COIL, radio, RF: 37-1/2 mc; integral type; unshielded; 1-3/4" lg x 1-1/2" diam overall; (air core; secondary wound in 7 turns of 1/8" copper tubing; primary wire JAN-C-76 wound inside secondary; primary leads protrude 1-1/2" out of secondary; secondary tapped at approx 1/2" from top; mtg by means of spot soldering).	Tripler stage tuning coil	Standard Coil #2701 Packard-Bell part/dwg #3-R-610	
39	3C1062	COIL, radio, RF: 75 mc; integral type; unshielded; 1-3/4" h x 1-3/8" diam overall; (air core; secondary wound in four turns of 1/8" copper tubing; primary wire JAN-C-76, wound inside secondary; primary leads protrude approx 1" out of secondary; secondary tapped approx 2" from top end; mtg by means of spot soldering).	Doubler stage tuning coil	Standard Coil #2702 Packard-Bell part/dwg #3-R-611	
40	3F3976A/R1	ANTENNA, whip: seamless tubular brass, bright nickel plated; telescopic three section; 29-15/16" extended; 13-3/16" collapsed; 1/2" OD at base; 7/32" OD at tip.	Radiates 75 mc signal	J. F. D. Mfg. Co. type BP1443 Packard-Bell part/dwg #202-1	
41	3F3976H/L1	CABLE, RF, antenna assembly: co-axial; flexible; characteristic impedance 72 ohms; #12 AWG solid copper axial conductor Amphenol; JAN-C-17 type RG-59/U; (outer conductor single braided copper shield; outer covering cotton braid; OD 3/4" x 11-7/8" lg overall; one end of cable terminated	Connects antenna to set	Packard-Bell part/dwg #S-40-55	

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-H

Reference Symbol	Army Stock No. Navy Stock No. British Ref. No.	Name of Part and Description	Function	Mfr. and Desig. or Standard Type	Cont. or Govt. Dwg. or Spec. No.
		by a male connector, H B Jones #PS-101-1/4, other end terminated by (axial line) Shakeproof #2108-8 terminal lug; (outer conductor) tapped 3-3/4" from end and brought out and terminated by a Shakeproof #2108-8 terminal lug).			
42	2Z7228.2	CONNECTOR, male contact: single contact; straight; 11/16" diam OD x 1-1/4" lg overall; (brass body, nickel plated; ceramic insulation; knurled coupling ring, 9/16-18 inside thread).	Antenna connector	H. B. Jones Co. type #P-101-1/4 Packard-Bell part/dwg #5-168	
43	2Z8671.4	CONNECTOR, female contact: single straight contact; 7/8" OD x 11/32" h overall; (7/8" diam phenolic insert; nickel plated brass body, contacts extends 1/2" behind body, two .096" diam mtg holes on 11/16" mtg/c).	Antenna connector		
44	2Z8652	SOCKET, antenna, assembly: .500" diam brass tubing, cadmium plated; 4" lg x 1-9/32" h overall; (mounts by means of two 8-32x1/2" studs on 3-3/8" mtg/c).	Connector for telescopic antenna	Packard-Bell part/dwg #S-4-110	
45	2Z5534A	JACK, telephone: for two-conductor 0.187" diam plug; 1-1/8" lg x 11/16" OD x 3/16" ID overall; (J-1 contact arrangement; includes two 11/16" OD insulating bushings, phenolic per JAN-P-13; one flat washer and one hex nut; 3/8" mtg hole).	Headset connection for audio	Packard-Bell part/dwg #50-004 Mallory type #A-2	Sig C type JE34A
46	3Z8310-5	SWITCH, rotary: modulation; 3-pole, four positions; single section; wafer, paper base phenolic, vacuum impregnated after machining per JAN-P-13, LTS-E-2; 1-7/8" diam x 1-1/2" lg overall; (shorting contacts; shaft 1/4" diam x 5/16" lg, bushing 3/8-32 x 3/8" lg; solder lug terminals, two hex mtg nuts 11/32" ID furnished with switch).	Modulation range selection	Centralab #6279 Packard-Bell part/dwg #12-32	
47	3Z8310-4	SWITCH, rotary: for meter; 2-pole, six-position; single section; wafer, paper base phenolic, vacuum impregnated after machining per JAN-P-13, LTS-E-2; 1-7/8" diam x 1-1/2" lg overall; (shorting contacts; shaft 1/4" diam x 5/16" lg, bushing 3/8-32 diam x 3/8" lg; solder lug terminals, two hex mtg nuts furnished with switch; size of nuts 11/32" ID).	Selector for meter circuits	Centralab #6278 Packard-Bell part/dwg #12-31	
48		SWITCH, toggle: DPST; bakelite body per JAN-P-14; 1-25/32" lg max x 23/32" w max x 1-29/32" d max; (bushing 15/32-32x1/4"; four solder terminals; furnished with two hex nuts; 1/2" hole).	Battery switch	A H&H Packard-Bell part/dwg #12-33	A W S C75.15-1944 type #ST27K
49	3Z2585.1	FUSE, cartridge: 1/8 amp, 250 v; one-time; glass body with round metal end; overall dimen 31/32" lg x 7/32" diam; (packed five in one envelope).	Meter, battery overload protector	Littelfuse type 4AG Packard-Bell part/dwg #147-2	

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-H

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
50		TRANSFORMER, AF, modulation: fully enclosed metal, cadmium plate case 2-1/8" h x 1-5/16" wd x 1-1/2" dp overall; hermetically sealed; bakelite terminal board on bottom of transformer; (pri 20,000 ohms impedance, secd 15,000 ohms impedance; turns ratio of pri to secd 2.4 to 2; four solder terminals protruding from bottom; mtg by means of four #6-32 mtg holes on 7/8" sq mtg/c).	Inductively couples the output of the modulator stage to the plate circuit of doubler	Peerless Electric Co. #4199S Packard-Bell part/dwg #1-120	
51		METER, millivoltmeter; 0 to 10 DC ma in five steps, 0 to 2 DC v in five steps, 0 to 100 DC v in five steps; round bakelite flush mtg case; 2-11/16" diam flange x 2-3/16" diam body x 1-9/16" dp; (accuracy ±2%; calibrated for 1/16" steel panel; 50 scale divisions; black numerals on white background; self-contained; three 1/16" mtg holes on flange spaced 120° apart; two stud terminals 5/8" lg x #10-32 thread, spaced 5/8" apart).	Indicates voltage and current	DeJur Amsco #S-210 Packard-Bell #59-101	
52	3F3976A/C1	COIL, radio: AF assembly; variable reactance tuning for 400 cps, 1300 cps and 3000 cps; three coils mounted in metal enclosed case 3-13/16" lg x 2-9/16" w x 2-25/32" dp; impregnated by tar compound; (dimensions below apply to all coils, paper impregnated core approx. 1-3/16" x 11/16"; iron lamination stack approx 5/8" dp x 3-3/8" wd; Peerless Elec. Co. #4197; 400 cps; coil inductance varies from 1.68 hys to 1.72 hys; 1000 cps coil inductance varies from 2.18 hys to 2.28 hys; 3000 cps coil inductance varies from 3.92 hys to 4.08 hys; the above inductances were taken at 1000 cps; DC resistance of 400 cps coil, 1700 ohms, tapped at 1000 ohms; DC resistance of 1000 cps coil, 1000 ohms, tapped at 500 ohms; DC resistance of 3000 cps coil, 600 ohms, tapped at 250 ohms; tuning accomplished by varying iron tuning slides across phenolic base insulation of coils assem; 9 solder terminals on phenolic mtg terminal board on bottom of assem; mounting by means of four spade screws #6-32 x 23/32" on each corner of metal case). NOTE: These coils cannot be replaced individually, in the event of failure the entire assembly must be replaced.	Serves as variable tuned tank inductances for AF oscillator	Packard-Bell part/dwg #S-44-116	
VT-124		TUBE: electron.	Crystal oscillator frequency tripler frequency doubler	JAN1A5GT/G Packard-Bell part/dwg #90-27	
VT-125		TUBE: electron.	Audio oscillator	JAN1C5GT Packard-Bell part/dwg #90-26	

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-H

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
		BOARD, terminal: one soldering terminal; 3/4" lg x 5/8" h x 1/2" d overall; phenolic insulation; (one 0.140" diam mtg hole).	Central Point for solder connections	Cinch type #1510 Packard-Bell part/dwg #141-2	
		BOARD, terminal: 21 soldering terminals, four fuse clips; 7-1/2" lg x 2-5/8" w; paper base phenolic; (four 5/32" diam mtg holes on 1 1/4" x 7 1/8" mtg/c).	Mounts resistors and capacitors	Packard-Bell part/dwg #S-33-201	JAN-P-13
		BRACKET, chassis: #20 ga USS CR steel, cadmium plated; 1-1/2" lg x 19/32" dp x 1-1/4" h overall; (two .154" diam mtg holes on 1-1/8" mtg/c).	Secures chassis	Packard-Bell part/dwg #25-101	
		BRACKET, terminal board: brass, cadmium plated; 2" lg x 3/8" sq; (two #6-32 tapped holes 1-1/4" apart for terminal board mtg; two #6-32 tapped holes 1" apart for mtg to chassis).	Mounts terminal board	Packard-Bell part/dwg #25-103	
		BUMPER, rubber: 1" diam x 3/4" lg; (one mtg hole 1/4" diam x 7/16" lg in center).	Shock mount	LaVelle Rubber Co. Packard-Bell part/dwg #204-1	
		CABINET, assembly, metal (BC-376-H): .036" (#20 Ga B & S) CR steel; cadmium plated; 8-9/16" w x 13" h x 7-3/4" dp overall; (exterior black wrinkle finish).	Houses BC-376-H	Packard-Bell part/dwg #S-46-45	
		CHASSIS: 20 ga USS CR steel, cadmium plated; 7-5/8" w x 6" dp x 2-1/2" h overall.	Contains component parts BC-376-H	Packard-Bell part/dwg #70-102	
		CLAMP, antenna guide: .035" brass, chrome plated; 1-5/8" lg x 17/32" h overall; (two .140" mtg holes on 1-1/8" mtg/c).	Secures antenna guide to cabinet	Pfleger Prod Packard-Bell part/dwg #74-34	
		CLAMP, crystal holding: spring brass #20 ga B & S (.032"), cadmium plated; 1-5/6" h x 3/16" w overall; (0.120" diam mtg hole).	Crystal holding clamp	Packard-Bell part/dwg #74-37	
		COVER, antenna: paper base phenolic per JAN-P-13, fungicidal treated; 2-1/8" lg x 1" w x 11/32" h overall; (two 6-32 tapped holes on 1" mtg/c).	Protects antenna socket	Pfleger Prod Packard-Bell part/dwg #S-51-128	
		FASTENER, latch: brass nickel plated; 1" lg x 7/16" w x 3/8" h overall.	Closes cabinet cover	Packard-Bell part/dwg #39-112	SC-D-2024D, Item #1
		FOOT, mtg: rubber; 1-1/32" diam x 1" lg; (one mtg hole 15/64" diam x 5/8" lg on center).	Mtg feet for cabinet	LaVelle Rubber Co. Packard-Bell part/dwg #146-2	
		GUIDE, antenna: brass tubing, chrome plated; 3/4" lg x 1/2" diam overall; (mounts by means of antenna guide clamp #74-34).	Mts antenna to cabinet	Pfleger Products Packard-Bell part/dwg #164-5	
		GUIDE, slide fastener: .011" brass nickel plated; .984" lg x .468" w x 5/32" h overall; (one .128" mtg hole).	Secures slide fasteners	Ucinite part #152208 Packard-Bell part/dwg #164-4	

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-H

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
		HANDLE, loop: 3/8" diam aluminum alloy, caustic dip finish; 6-13/16" lg x 3" h overall; (mounts by means of two brackets spaced 2-11/16").	For carrying BC-376-H	Packard-Bell part/dwg #S-45-3	
		INSULATOR, standoff: conical; white steatite, glazed per JAN-I-10; 1-1/2" lg overall; (base diam 1"; top diam 1/2"; 8/32 x 5/8" dp mtg hole in each end; part of antenna socket assembly).	Insulator for antenna socket	Pacific Clay Products Packard-Bell part/dwg #88-25	
		KNOB, bar: black bakelite; for 1/4" diam shaft; single #6-32 set screw; 1-1/4" lg x 5/8" h overall; (shaft hole 9/32" diam).	Selector switch knob for meter and modulator circuits	Kurz Kasch Co. #2-29-2-L Packard-Bell part/dwg #6-22	
		NAMEPLATE, BC-376-H: #18 gage aluminum alloy; (white border and characters reverse etched on black oxidized background; four .093" diam mtg holes on corners).	Identification BC-376-H	Kennedy Namplate Co. Packard-Bell part/dwg #83-150	
		PANEL, front: (BC-376-H) .045 CR steel, cadmium plated; dull black front; 8 7/16" wd x 6 31/32" h; (special markings included for 12.5 mc crystal osc; 37.5 mc tripler; 75 mc doubler; phone jack; "ON-OFF" switch; modulation switch; meter switch; fastens to cabinet by means of 8 slotted holes around perimeter).	Front panel BC-376-H	Packard-Bell part/dwg #79-22	
		RETAINER, battery: plywood, stained one coat fungicidal lacquer; 7¾" w x 6⅞" dp x 4 1/16" h overall; (holds one type BA-35 and two type BA-36 batteries).	Houses Batteries BC-376-H	Packard-Bell part/dwg #131-9	
		RIVET, snapslide: brass, nickel plated; 7/16" diam x 0.301" lg overall; (holds snapslide latch in position; rivet portion 0.125" dia x 0.159" lg).	Secures snapslide to cabinet	Packard-Bell part/dwg #75-37	SC-D-2024-D Item #2
		SHIELD, capacitor: .031 cornice copper, cadium plated; 1⅛" w x 1 9/16 h x 1-1/8" dp overall; (two .128" diam mtg holes on 21/32" mtg/c).	Protects variable Capacitor	Pfleger Products Packard-Bell part/ dwg #21-130	
		SOCKET, antenna, transporting: 1/2" diam brass, chrome plated brass tubing; lg x 1/2" diam.	Mounts antenna to cabinet	Packard-Bell part/ dwg #4-109	

MODEL: TEST INDICATOR BE-67

20		SWITCH, toggle: SPDT; metal body with bakelite back per JAN-P-13, LTS-E-2; 1⅜" lg x 11/16" wd x 1⅞" h overall; (switch lever extends into switch body; three terminals on back of switch, contact by means of #28 hole on each terminal with #6-32 screw; by means of plate 2 1/16" lg x ¾" w on front of switch).	Battery Switch	A H & H #SW-128 Packard-Bell part/dwg #12-34	
		RESISTOR, variable: wire wound; 50,000 ohms; 3 watt; three terminals; body 1⅝" diam x 11/16" dp; shaft ¼" diam x ⅜" lg; bushing 5/16" diam x ⅝" lg; (enclosed molded bakelite body, metal cap on back; 2 hex mtg nuts furnished).	Regulates battery current	Clarostat Co. RS-277 Packard-Bell part/dwg #126-17	SC-D-2237

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST INDICATOR BE-67

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
22		METER, milliammeter: DC; 0 to 1 ma; round bakelite flush mtg case; 3½" diam flange x 2¾" body x 1 7/16" d; calibrated for 1/16" steel panel; 50 scale divisions; black numerals on white background; self contained; three mtg holes for #4-40 screw on 5/16" radius spaced 120° on mtg flange; two studs ¾" lg x #10-32 thread, spaced 1¼" apart).	Indicates relay current	Marion #53-R Packard-Bell part/dwg #59-100	1S-195-E
23	2Z5534A	JACK, telephone: for 2 conductor 0.1875" diam plug; 1⅛" lg x 11/16" OD x 3/16" ID overall; (J1 contact arrangement; includes two 11/16" OD bakelite insulating bushing, one flat washer, one hex nut; 3/8" mtg hole).	Connection for relay test	Mallory type #A-2 Packard-Bell part/dwg #50-004	JK34A
		CABINET, Test Indicator BE-67: white oak; copper naphthenate dipped inside; strained; lacquer finish; 7-7/8" lg x 5-1/4" dp x 4-13/16" h overall; single leather handle on side of cover; (includes hinges and snaps).	Houses BE-67	A B Zwobell #28640 Packard-Bell part/dwg #S-46-44	SC-D-2156-C
		CLAMP, battery: 0.032 brass, cadium plated; 2" lg x 1 13/16" w x 13/32" h overall; (holds two BA-31 batteries; two .120" diam mtg on 1-3/8" mtg/c).	Mounts Batteries	Packard-Bell part/dwg #74-35	SC-2157-D Item 9
		KNOB, round: black bakelite per JAN-P-14; for ¼" shaft; single 8-32 set screw; marked with white arrow; 1⅛" diam x 9/16" h overall.	Knob for Variable Resistor BE-67	Kurz-Kasch type S-17-64L Packard-Bell part/dwg #6-21	
		NAMEPLATE, BE-67: #18 ga aluminum alloy; 2¼" lg x 15/16" wd; (white border and characters reverse etched with black oxidized background; four .093" diam mtg holes on corners).	Identification for BE-67	Kennedy Nameplate Co. Packard-Bell part/dwg #82-147	
		PANEL, front: 3/16" thk x 3 15/16" wd x 7-5/8" lg; paper base phenolic per JAN-P-13; (six 0.120" diam mtg holes on 5-3/8" x 1-31/32" mtg/c).	Front panel for BE-67	Packard-Bell part/dwg #79-27	
		STUD, battery clamp: CR steel, cadium plated; ¼" diam x 2 1/16" lg.	Secures Batteries	Packard-Bell part/dwg #57-104	

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-K

Ref. Sym.	*Army/Navy Stock No.*	*Name of Part and Description*	*Function*	*Mfr. & Desig. or JAN Type*	*Cont. or Gov't Dwg. or Spec. No.*
A-101		CABINET, metal: 52S 1/4 hard aluminum per QQ-A-318; clear anodized, black wrinkle finish; .051″ thk; 8 5/8″ wd x 12 3/16″ h x 7 3/4″ d overall.	Houses BC-376-K	Loral part 68-26	Loral dwg 68-26
A-102		COVER, cabinet: metal; 52S 1/4 hard aluminum per QQ-A-318; clear anodized, black wrinkle finish; .051″ thk; 8 5/8″ wd x 12 3/16″h x 1/2″ d overall; hinged 5″ from bottom; equipped with four slotted quarter turn fasteners to attach to cabinet, two wing quarter turn fasteners to close hinged section.	Cover for A-101	Loral part 68-25	Loral dwg 68-25
A-103	R16SLF-267	HANDLE, carrying: Black leather; clamped to A-101	Handle for A-101	Specialty Leather Products #267	Loral dwg 68-83
A-104		CLAMP, handle: brass, nickel plated; 1 5/16″ lg x 11/16″ wd x 7/32″ h overall; two 3/16″ mtg holes on 27/32″ mtg/c.	Mounts A-103	Loral part 68-20	Loral dwg 68-20
A-105		COVER, antenna guide: stainless steel, 1 11/16″ lg x 3/4″ wd x .005″ thk; two 5/32″ mtg holes on 7/16″ mtg/c at one end.	Covers antenna guide hole in E-103	Loral part 68-19	Loral dwg 68-19
A-106	R16LOE-68-28	SOCKET, antenna, transporting: brass, nickel plated brass tubing; 3″ lg x 1/2″ diam.	Holds antenna when not in use	Loral part 68-28	Loral dwg 68-28
A-107	R16LOE-6831	GUIDE, antenna, transporting: brass, nickel plated; 1/2″ OD x .417″ ID x 3/4″ lg overall.	Holds antenna when not in use	Loral part 68-31	Loral dwg 68-31
A-108		CLAMP, antenna guide: .035″ brass, chrome plated; 1 5/8″ lg x 1/2″ wd x 1/2″ h overall; (two 5/32″ mtg holes on 1 1/8″ mtg/c).	Secures A-106, A-107 to cabinet	Loral part 68-5	Loral dwg 68-5
A-109	R33B3008	FOOT, mtg: rubber; 1″ diam x 1″ lg overall, hemispherical end; mtg hole 1/8″ diam x 3/8″ deep; ctb 5/16″ diam x 5/8″ deep.	Foot for cabinet A-101	Atlan India Rub #23	Loral dwg 68-62
A-109.01		FOOT, mtg: Same as A-109.	Foot for Cabinet A-101		
A-109.02		FOOT, mtg: Same as A-109.	Foot for Cabinet A-101		
A-109.03		FOOT, mtg: Same as A-109.	Foot for Cabinet A-101		
A-110		Bumper, rubber: Same as A-109. Fastens to A-102.	Holds Battery in place		
A-110.01		BUMPER, rubber: Same as A-109. Fastens to A-102.	Holds Battery in place		
A-110.02		BUMPER, rubber: Same as A-109. Fastens to A-102.	Holds Battery in place		
A-111		RETAINER, battery, plywood, stained one coat fungicidal lacquer; 7 3/4″ wd x 6 7/8″ dp x 4 1/16″ h overall; (holds one type BT-101 and two type BT-102 batteries).	Houses batteries BT-101, BT-102, BT-103	Loral part 68-70	Loral dwg 68-70
A-112		CHASSIS: 20 ga USS CR steel, cadmium plated; 7 5/8″ wd x 6″ dp x 2 1/2″ h overall.	Contains component parts BC-376-K	Loral part 68-60	Loral dwg 68-60

CONTRACT NO. N383s-42366, N383s-48062, N383s-60473.

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-K

Ref. Sym.	*Army/Navy Stock No.*	*Name of Part and Description*	*Function*	*Mfr. & Desig. or JAN Type*	*Cont. or Gov't Dwg. or Spec. No.*
A-113		PANEL, front: aluminum #24ST, 1/16" thk; anodized; 8 13/32" wd x 6 31/32" h; black finish reverse etched markings included for modulation switch, metor switch, phone jacks, "ON-OFF" switch, 12.5 mc crystal osc, 37.5 mc tripler, 75 mc doubler, R.F. level rheostat and "R.F.-NORM" switch; fastens to cabinet by means of eight slots around perimeter.	Front Panel BC-376-K	Loral part 68-13	Loral dwg 68-13
A-114		BRACKET, terminal board: brass, cadmium plated; 1 15/16" lg x 3/8" sq; (two #6-32 tapped holes 1 1/4" apart for terminal board mtg; two #6-32 tapped holes 1" apart for mtg to chassis).	Mounts terminal board	Loral part 68-8	Loral dwg 68-8
C-101	R16C10240-500	CAPACITOR, fixed: mica; 2000 mmf ±10%; 500 vdcw; temperature co-efficient not specified; 53/64" max lg x 53/64" max wd x 9/32" max thk; molded bakelite case; two #18 AWG wire leads 1 1/8" min lg.	Screen bypass, crystal	CM30A202K	JAN C-5
C-102		CAPACITOR, fixed: mica; 100 mmf ±10%; 500 vdcw; temperature co-efficient not specified; 1 1/16" max lg x 15/32" max wd x 7/32" max thk; molded bakelite case; two #20 AWG wire leads 1 1/8" min lg.	Grid capacitor crystal to doubler	CM20A101K	JAN C-5
C-103		CAPACITOR, variable: air dielectric; plate meshing type; single section; 5 to 25 mmf; 500 v RMS test; 15/16" lg x 15/16" w x 1 1/4" h overall; shaft 5/16" lg x .125" diam; screwdriver adjustment; 7 brass, nickel plated plates; 360° rotation; ceramic insulation; solder lug terminals; two 4/40 tapped mtg holes on 21/32" mtg/c.	Tuning for crystal stage	Hammarlund APC 25	
C-104		CAPACITOR, fixed: mica; 2000 mmf ±10%; 500 vdcw; temperature co-efficient not specified; 53/64" max lg x 53/64" max wd x 9/32" max thk; molded bakelite case; two #18 AWG wire leads 1 1/8" min lg.—Same as C-101.	Screen bypass tripler	CM30A202K	JAN C-5
C-105		CAPACITOR, fixed: mica; 100 mmf ±10%; 500 vdcw; temperature co-efficient not specified; 1 1/16" max lg x 15/32" max wd x 7/32" max thk; molded bakelite case; two #20 AWG wire leads 1 1/8" min lg.—Same as C-102.	Grid capacitor tripler to doubler	CM20A101K	JAN C-5
C-106		CAPACITOR, variable: air dielectric 5 to 25 mmf; 500 v RMS test; 15/16" lg x 15/16" w x 1 1/4" h overall; shaft 5/16" lg x .125" diam; screwdriver adjustment; 7 brass, nickel plated plates; 360° rotation; ceramic insulation; solder lug terminals; two 4/40 tapped mtg holes on 21/32" mtg/c.—Same as C-103	Tuning for tripler stage	Hammarlund APC 25	
C-107		CAPACITOR, fixed: mica; 2000 mmf ±10%; 500 vdcw; temperature co-efficient not specified; 53/64" max lg x 53/64" max wd x 9/32" max thk; molded bakelite case; two #18 AWG wire leads 1 1/8" min lg.—Same as C-101.	Fil. bypass doubler	CM30A202K	JAN C-5

CONTRACT NO. N383s-42366, N383s-48062, N383s-60473.

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-K

Ref. Sym.	Army/Navy Stock No.	Name of Part and Description	Function	Mfr. & Desig. or JAN Type	Cont. or Gov't Dwg. or Spec. No.
C-108		CAPACITOR, fixed: mica; 100 mmf ±10%; 500 vdcw; temperature co-efficient not specified; 1 1/16" max lg x 15/32" max wd x 7/32" max thk; molded bakelite case; two #20 AWG wire leads 1 1/8" min lg.—Same as C-102.	Screen bypass doubler	CM20A101K	JAN C-5
C-109	R16C11339-67	CAPACITOR, fixed: paper; 400,000 mmf −10% +15%; 400 vdcw; hermetically sealed metal case; 2 3/8" lg x 3/4" diam; mineral oil impregnated; two solder lugs 3/8" lg; single hold mtg clamp, #25 mtg hole.	AF bypass	Pyramid PT1MOAS4-P4	
C-110	R16C11338-22-650	CAPACITOR, fixed: paper; 250,000 mmf −10% +15%; 400 v; 2" lg x 3/4" diam; metal case hermetically sealed; mineral oil impregnation; two solder lugs 3/8" lg; single hole mtg clamp, #25 mtg hole.	D. C. blocking, headset	Pyramid PT1MOAS	
C-111		CAPACITOR, fixed: paper; 900,000 mmf −10% +15%; 400 v; 25/16" h x 1" diam; metal case hermetically sealed; mineral oil impregnation; one bare solder lug protruding from bottom center approx 1/4"; case is common terminal mtg clamp with #25 mtg holes on 1 5/8" mtg/c.	AF bypass	Pyramid PTMA4-9	
C-112		CAPACITOR, fixed: paper; 400,000 mmf −10% +15%; 400 vdcw; hermetically sealed metal case; 2 3/8" lg x 3/4" diam; mineral oil impregnated; two solder lugs 3/8" lg; Single hole mtg clamp. #25 mtg hole. Same as C-109.	Screen bypass, modulator	Pyramid PT1MOAS4-P4	
C-113	R16C11210-150	CAPACITOR, fixed: paper; 2700 mmf −0% +10%; 400 v; 1 1/8" lg x 11/16" diam; metal case, hermetically sealed; mineral oil impregnation; two axial mtg lugs 3/8" lg; mtg bracket on center of case, with one #28 mtg hole.	RF bypass modulator grid	Pyramid PT	
C-114	R16C11200-800	CAPACITOR, fixed: paper; 1800 mmf −0% +10%; 400 vdcw; 1 1/8" lg x 7/16" diam; metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 2 1/2" lg.	Modulator grid, series for 3000 cps	Pyramid PT1MO	Loral 68-88-1
C-115	R16C11223-390	CAPACITOR, fixed: paper; 4000 mmf −0% +10%; 400 vdcw; 1 1/8" lg x 7/16" diam; metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 2 1/2" lg.	Modulator grid, shunt for 3000 cps	Pyramid PT1MO	Loral 68-88-2
C-116	R16C11223-50	CAPACITOR, fixed: paper; 3,200 mmf −0% +10%; 400 vdcw; 1 1/8" lg x 7/16" diam; metal case, hermetically sealed, mineral oil impregnation; two axial wire leads 2 1/2" lg.	Modulator grid, series for 1300 cps	Pyramid PT1MO	Loral 68-88-3
C-117	R16C11255-37-3	CAPACITOR, fixed: paper 13,000 mmf −0% +10%; 400 vdcw; 1 1/8" lg x 9/16" diam; metal case, hermetically sealed, mineral oil impregnation; two axial wire leads 2 1/2" lg.	Modulator grid shunt for 1300 cps	Pyramid PT1MO	Loral 68-88-4
C-118	R16C11255-54-50	CAPACITOR, fixed: paper; 20,000 mmf −0% +10%; 400 vdcw; 1 1/8" lg x 5/8" diam; metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 2 1/2" lg.	Modulator grid series for 400 cps	Pyramid PT1MO	Loral 68-88-5

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TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-K

Ref. Sym.	*Army/Navy Stock No.*	*Name of Part and Description*	*Function*	*Mfr. & Desig. or JAN Type*	*Cont. or Gov't Dwg. or Spec. No.*
C-119	R16C11292-168	CAPACITOR, fixed: paper; 58,000 mmf −0% +10%; 400 vdcw; 1 3/8" lg x 21/32" diam; metal case, hermetically sealed; mineral oil impregnation; two axial wire leads 2 1/2" lg.	Modulator grid shunt for 400 cps	Pyramid PT1MOA	Loral 68-88-6
C-120		CAPACITOR, fixed: Same as C-102.	Filter, RF rectification		
C-121		CAPACITOR, fixed: mica; 100 mmf ±10%; 500 vdcw; temperature co-efficient not specified; 1 1/16" max lg x 15/32" max wd x 7/32" max thk; molded bakelite case; two #20 AWG wire leads 1 1/2" min lg.—Same as C-102.	Filter, RF rectification	CM20A101K	JAN C-5
C-122		CAPACITOR, variable: air dielectric; 5 to 25 mmf; 500 v RMS test; 15/16" lg x 15/16" w x 1 1/4" h overall; shaft 5/16" lg x .125" diam; screwdriver adjustment; 7 brass, nickel plated plates; 360° rotation; ceramic insulation; solder lug terminals; two 4/40 tapped mtg holes on 21/32" mtg/c.—Same as C-103	Tuning for doubler stage	Hammarlund APC-25	
E-101	R16A5050-275	ANTENNA, whip; seamless tubular brass, bright nickel plated; telescopic three section; 30" extended 13 3/16" collapsed; 13/32" OD at base; 1/4" OD at tip.	Radiates 75 mc signal	JFD Mfg.	Loral dwg 68-89
E-102	R16K3367	KNOB: round; dural, black anodize; engraved radial indicator line; 1/4" shaft size, 3/8" deep hole; two socket head 1/4" by #8-32, cup point set screws; 7/8" diam by 5/8" dp overall.	Knob for R-103	Loral part 24-37	Loral dwg 24-37
E-103	R16LOE-68-36	INSULATOR, standoff: conical; white steatite glazed per JAN-1-10; 1 1/2" lg overall; base diam 1"; top diam 1/2"; 8-32 x 3/8" dp mtg hole in each end; part of antenna socket assembly.	Insulator support for antenna socket X-105	A1SiMag #1051	Loral dwg 68-36
E-104		GUIDE, antenna: linen base phenolic per MIL-P-15035, fungicided; 2 1/8" lg x 1" w x 11/32" h overall; two 6-32 tapped holes on 1" mtg/c.	Insulates antenna from housing	Loral part 68-21	Loral dwg 68-21
E-105		INSULATOR, standoff: Same as E-103	Insulator support for antenna socket X-105		
E-106		KNOB: pointer; black bakelite; molded pointer; 1/4" shaft size, 13/32" dp hole; one socket head 1/4" by #8-32 cup point set screw; 1 1/4" length overall, 3/4" diam skirt 5/8" h overall.	Knobs for S-102, S-104	Kurz-Kasch #S-292-3L	Loral dwg 21-110
F-101	R17F14206-25	FUSE, cartridge: 1/8 amp, 250 v; one-time; glass body with round metal end; overall dimension 13/16" lg x 1/4" diam.	Meter, battery overload protector	Littelfuse type 3AG	Loral 68-90
F-102		FUSE, cartridge: Same as F-101	Spare		
J-101	R17-P4436-989-15	CONNECTOR, male contact: four round straight contacts; 3/4" OD x 13/16" lg overall; 5 amp, 115 v; molded black bakelite.	Battery connector	Amphenol CP4-S	Loral 68-91

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TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-K

Ref. Sym.	*Army/Navy Stock No.*	*Name of Part and Description*	*Function*	*Mfr. & Desig. or JAN Type*	*Cont. or Gov't Dwg. or Spec. No.*
J-102	R16R2510	CONNECTOR, female contact: single straight contact; 7/8" OD x 11/32" h overall; 7/8" diam phenolic insert; nickel plated brass body, contacts extend 1/2" behind body, two .096" diam mtg holes on 11/16" mtg/c.	Antenna connector	Jones H B S-101	Loral 68-92
J-103		JACK, telephone: for two-conductor 0.187" diam plug; 1 1/8" lg x 13/16" OD x 1/4" ID overall; J-1 contact arrangement; includes two 11/16" OD insulating bushings, phenolic per JAN-P-13; one flat washer and one hex nut; 3/8" mtg hole.	Headset connection for audio	Mallory type SC-1A	Loral 68-93
L-101	R16LOE-68-73	COIL, radio, RF: 12 1/2 mc; crystal stage; integral type; primary and secondary interwound; single layer wound; enamel insulation; 2 1/2" lg x 1 1/8" diam; (bakelite form, air core; mounts by two brackets each with single #6-32 tapped hole on 1 1/2" mtg/c; primary windings brought out to two solder lug terminals on diagonally opposite ends of form, secondary windings brought out to two solder lug terminals on other diagonally opposite ends of form; coil stamped #68-4).	Crystal stage tuning coil	Loral part 68-73	Loral dwg 68-73
L-102	R16LOE-68-76	COIL, RF: 37 1/2 mc tuning; 6 1/2 turns; 3/4" diam, 5 1/2 turns per inch; integral type; inner winding #22 AWG stranded, insulated; outer winding 3/32" OD tubing; air core; unshielded; 1 1/4" lg x 1" dia; inner winding concentric with outer winding.	Tripler stage tuning coil	Loral part 68-76	Loral dwg 68-76
L-103	R16LOE-68-77	COIL, RF: 75 mc tuning; 3 1/2 turns; 1/2" dia, 4 turns per inch; integral type; inner winding #22 AWG stranded insulated; outer winding 3/32" OD tubing; air core; unshielded; 1" lg x 3/4" dia; inner winding concentric with outer winding; tapped at 1/2 turns from grounded end.	Doubler stage tuning coil	Loral part 68-77	Loral dwg 68-77
L-104	R16LOE-68-3	COIL, RF choke: 50 microhenries; .025 amps, 3.6 ohms pie windings; 5/32" dia x 1/2" long bakelite winding form, two axial wire leads, 1 5/16" long.	Filter RF Rectification	Loral Part 68-3	Loral dwg 68-3
L-105		COIL, AF: tuning; 400 cps; part of Z-101; not separately replaceable.	Oscillator coil 400 cps		
L-106		COIL, AF: tuning; 1300 cps; part of Z-101; not separately replaceable.	Oscillator coil 1300 cps		
L-107		COIL, AF: tuning; 3000 cps; part of Z-101; not separately replaceable.	Oscillator coil 3000 cps		
M-101	R16LOE-68-78	METER, millivoltmeter: 0 to 10 DC ma in five steps, 0 to 2 DC v in four steps, 0 to 100 DC v in five steps; round bakelite flush mtg case; 2 11/16" diam flange x 2 3/16" diam body x 1 3/16" dp; accuracy ±2%; calibrated for 1/16" aluminum panel; 50 scale divisions; black numerals on white background; self-contained; three 1/8" mtg holes on flange spaced 120° apart; two stud terminals 5/8" lg x #10-32 thread, spaced 1" apart.	Indicates voltage current and RF output	Marion Elec. Instr. 52N Special	Loral dwg 68-78

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TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-K

Ref. Sym.	*Army/Navy Stock No.*	*Name of Part and Description*	*Function*	*Mfr. & Desig. or JAN Type*	*Cont. or Gov't Dwg. or Spec. No.*
N-101		NAMEPLATE, BC-376-K .020″ aluminum alloy; 3″ lg x 2″ wd; white border and characters reverse etched on black oxidized background; four .125″ diam mtg holes on corners.	Identification BC-376-K		Loral dwg 68-66
P-101	R17P4436-989-10	CONNECTOR, female contact: plug; four round straight contacts; 5/8″ OD x 13/16″ lg overall; 5 amp, 115 v; molded black bakelite body enclosed in metal; cable opening 1/4″ diam.	Battery connector	Amphenol MPF-4L	Loral dwg 68-94
P-102		CONNECTOR, male contact: single contact; straight 11/16″ diam OD x 1 1/4″ lg overall; brass body, cadmium plated; ceramic insulation; knurled coupling ring, 9/16-13 inside thread.	Antenna connector	Jones H B P-101-1/4″	Loral dwg 68-95
R-101	R16R18662-3-75	RESISTOR, fixed: wire wound; 1865 ohms ±1%, 9/16″ diam; 9/16″ lg; ceramic form, two radial solder lugs 1/4″ lg.	Meter multiplier for 2 v range	Inst. Res. Type P 2	
R-102	R16R18751-778-500	RESISTOR, fixed: wire wound; 100,000 ohms ±1%; 9/16″ diam; 9/16″ lg; ceramic form, two radial solder lugs 1/4″ lg.	Meter multiplier for 100 v range	Inst. Res. Type P 2	
R-103	R16P5582-117-5000	RESISTOR, variable: composition; 2500 ohms ±10%; 2 w linear taper; 1 1/8″ diam metal case; 7/8″ dp less shaft; 1/4″ diam x 3/8″ lg shaft; 3 solder lug terminals 3/8-32 x 3/8″ lg mtg bushing; hex nut and lockwasher supplied; no switch.	Controls RF output	CTS Type 95	Loral dwg A-68-65 JAN R-94
R-104	R16R18586-70-600	RESISTOR, fixed: wire wound; 15 ohms ±1%; 9/16″ diam; 9/16″ lg; ceramic form; two radial solder lugs 1/4″ lg.	Meter shunt for current, crystal	Inst. Res. Type P-2	
R-105		RESISTOR, fixed: wire wound; 15 ohms ±1%; 1/2 w; 9/16″ diam; 9/16″ lg; ceramic form; two radial solder lugs 1/4″ lg.—Same as R-104.	Meter shunt for current, tripler	Inst. Res. Type P-2	
R-106		RESISTOR, fixed: wire wound; 15 ohms ±1%; 1/2 w; 9/16 diam; 9/16″ lg; ceramic form; two radial solder lugs 1/4″ lg.—Same as R-104.	Meter shunt for current, doubler	Inst. Res. Type P-2	
R-107		RESISTOR, fixed: wire wound; 15 ohms ±1%; 1/2 w; 9/16″ diam; 9/16″ lg; ceramic form; two radial solder lugs 1/4″ lg.—Same as R-104.	Meter shunt for current, modulator	Inst. Res. Type P-2	
R-108		RESISTOR, fixed: composition; 120,000 ohms ±10%; 1/2 w; 0.468″ max lg x 0.249″ max diam; (bakelite insulation; two axial wire leads 1 1/2″ lg).	Grid resistor, crystal stage	JAN RC20BF124K	JAN R-11
R-109		RESISTOR, fixed: composition; 120,000 ohms ±10%; 1/2 w; 0.468″ max lg x 0.249″ max diam; (bakelite insulation, two axial wire leads 1 1/2″ lg).—Same as R-108.	Grid leak to tripler	JAN RC20BF124K	JAN R-11

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Ref. Sym.	*Army/Navy Stock No.*	*Name of Part and Description*	*Function*	*Mfr. & Desig. or JAN Type*	*Cont. or Gov't Dwg. or Spec. No.*
R-110		RESISTOR, fixed: composition; 270 ohms ±10%; ½ w; 0.468″ max lg x 0.249″ max diam; bakelite insulation; two axial wire leads 1½″ lg.	RF Stopping resistor, tripler	JAN RC20BF271K	JAN R-11
R-111		RESISTOR, fixed: composition; 56,000 ohms ±10%; ½ w; 0.468″ max lg x 0.249″ max diam; bakelite insulation; two axial wire leads 1½″ lg.	Grid leak resistor, doubler stage	JAN RC20BF563K	JAN R-11
R-112		RESISTOR, fixed: Same as R-110	RF Stopping resistor, doubler		
R-113		RESISTOR, fixed: composition; 5600 ohms ±10%; ½ w; 0.468″ max lg x 0.249″ max diam; bakelite insulation; two axial wire leads 1½″ lg.	Doubler stage voltage dropping	JAN RC20BF562K	JAN R-11
R-114	R16R18746-200	RESISTOR, fixed: wire wound; 50,000 ohms ±1%; ½ w; 11″ lg x ⅝″ diam; wire enamel insulated; ceramic form; two radial solder lugs ⅜″ lg.	Grid leak modulator stage	Inst. Res. Type P-4	Loral dwg 68-97
R-115		RESISTOR, fixed: composition; 1500 ohms ±10%; ½ w; 0.468″ max lg x 0.249″ max diam; bakelite insulation; two axial wire leads 1½″ lg.	RF measurement, limiting	JAN RC20BF511K	JAN R-11
S-101	R17S28224-100	SWITCH, toggle: DPST; bakelite body; 1 25/32″ lg max x 23/32″ w max x 1 29/32″ max; bushing 15/32″-32 x ¼″; four solder terminals; furnished with two hex nuts; ½″ hole.	Battery switch	A H & H Type 20510	Loral dwg 68-98
S-102	R17S28224-47	SWITCH, rotary: for meter; 2-pole, six-position; two section; wafer, paper base phenolic, vacuum impregnated after machining per JAN-P-13, LTS-E-2; 1⅞″ diam x 2⅛″ lg (non-shorting contacts; shaft ¼″ diam x 1 3/32″lg, bushing ⅜-32 diam x ⅜″lg; solder lug terminals; two hex mtg nuts furnished with switch).	Selector for meter circuits	Oak #49256-H1	Loral dwg 68-64
S-103		SWITCH, toggle: DPDT; bakelite body; 1 9/16″ lg x 19/32″ w x 1 13/16″ dp overall; bushing 15/32-32 x 7/16″ lg; furnished with one hex, one knurled nut.	Positions M-101 for NORM or RF	A H & H 20510	Loral dwg 68-99
S-104	R16S11130-5	SWITCH, rotary: modulation; 3-pole four positions; two section; wafer, phenolic, fungicide; 1⅞″ diam x 2⅛″ lg overall; (non-shorting contacts; shaft ¼″ diam x 1 3/32″ lg, bushing ⅜-32 x ¼″ lg; solder lug terminals, hex mtg nut furnished with switch).	Modulation range selection	Oak Type H	Loral dwg 68-74
T-101	R16LOE-68-61	TRANSFORMER, AF, modulation: fully enclosed metal, case 2⅜″ h x 1⅛″ wd x 1⅞″ dp overall; hermetically sealed; pri 14,400 ohms impedance, secd 10,000 ohms, impedance; turns ratio of pri to secd 1.2 to 1; four solder terminals protruding from bottom; mtg by means of two #6-32 studs on 1¼″ mtg/c.	Inductively couples the output of the modulator stage to the plate circuit of doubler	Freed Trans. #23209	MIL-T-27 Loral dwg 68-61

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TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST OSCILLATOR BC-376-K

Ref. Sym.	*Army/Navy Stock No.*	*Name of Part and Description*	*Function*	*Mfr. & Desig. or JAN Type*	*Cont. or Gov't Dwg. or Spec. No.*
V-101		TUBE: electron.	Crystal oscillator	JAN 1A5GT/G	JAN-1-A
V-102		TUBE: electron.	Frequency tripler	JAN 1A5GT/G	JAN-1-A
V-103		TUBE: electron.	Frequency doubler	JAN 1A5GT/G	JAN-1-A
V-104		TUBE: electron.	Audio oscillator	JAN 1C5GT/G	JAN-1-A
W-101		CABLE ASSEMBLY, battery: cloth jacketed; round; 1/4" diam; 20" lg; four #22 AWG stranded copper conductors each comprising seven #30 AWG strands; plastic insulated conductors; coding as follows: red B+; black B−; green A+; white A−; Amphenol #MPF4L four terminal female connector at one end; four lug terminals at other end.	Power connection to set	Loral part 68-80	Loral dwg 68-80
W-102		CABLE ASSEMBLY, RF: unshielded; #18 stranded; cotton wrap, rubber covered; single conductor; .245" OD; one foot length; one end of cable terminated by P-102; other end terminated by solder lug.	Connects Antenna to set	Loral part 68-81	Loral dwg 68-81
X-101		SOCKET, tube: std octal; mica filled bakelite; 1 1/4" diam x 3/4" h overall; (mounts by means of one space ring and one snap ring furnished with socket).	Mounts V-101 crystal stage	Amphenol 78S-8-TM	Loral dwg 68-100
X-102		SOCKET, tube: Same as X-101.	Mounts V-102 tripler stage		
X-103	R16S6186	SOCKET, tube: std octal; ceramic; 1 1/4" diam x 3/4" h overall; mounts by means of one space ring and one snap ring furnished with socket on 1 1/4" diam mtg/c.	Mounts V-103 doubler stage	Amphenol 49SS8M	Loral dwg 68-104
X-104		SOCKET, tube: Same as X-101.	Mounts V-104 audio oscillator		
X-105		SOCKET, crystal: two contacts; ceramic; solder terminals; 1 3/8" x 7/16" x 7/8" overall; under chassis mounting, two 3/8" clearance holes 1 1/8" mtg/c; Navy type CJA-49391.	Mounts Crystal Y-101	Millen #33102	Loral dwg 68-101
X-106	R16B1975-5000	SOCKET, antenna, assembly: .500" diam brass tubing, nickel plated; 4" lg x 1 9/32" h overall; mounts by means of two 8-32 x 1/2" studs on 3 3/8" mtg/c.	Mounts antenna	Loral part 68-6	Loral dwg 68-6
Y-101	R16LOE-68-79	CRYSTAL UNIT: single quartz wafer; 12,500 kc; transmitting AT harmonic cut; two mtg plugs .093" diam x 13/32" lg spaced .493"; moisture and fungus proofed per JAN-T-152	Frequency control	Bliley Elec. Type MC 9	Loral dwg 68-79

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MODEL: TEST OSCILLATOR BC-376-K

Ref. Sym.	*Army/Navy Stock No.*	*Name of Part and Description*	*Function*	*Mfr. & Desig. or JAN Type*	*Cont. or Gov't Dwg. or Spec. No.*
Z-101	R16LOE-68-38	COIL: AF assembly; variable inductance tuning for 400 cps, 1300 cps and 3000 cps; three coils mounted in metal enclosed case $3\frac{13}{16}$" lg x $2\frac{9}{16}$" w x $2\frac{25}{32}$" dp; impregnated by tar compound; 400 cps coil inductance varies from 2.0 hy to 4.0 hy; 1300 cps coil inductance varies from 1.0 hy to 2.0 hy; 3000 cps coil inductance varies from 1.0 hy to 2.0 hy; the above inductances were taken at 1000 cps; DC resistance of 400 cps coil, 650 ohms, tapped at 300 ohns; DC resistance of 1300 cps coil, 380 ohms, tapped at 170 ohms; DC resistance of 3000 cps coil 380 ohms; tapped at 180 ohms; tuning accomplished by varying iron tuning slides across phenolic base insulation of coils assem; 9 solder terminals on phenolic mtg terminal board on bottom of assem; mounting by means of four spade screws #6-32 x $\frac{23}{32}$" on each corner of metal case.	Serves as variable tuned tank inductances for AF oscillator		Loral dwg 68-38
TB-101		BOARD, terminal: 21 soldering terminals, four fuse clips; $7\frac{1}{2}$" lg x $2\frac{5}{8}$" wd; glass base melamine; four $\frac{5}{32}$" diam mtg holes on $1\frac{1}{4}$" x $7\frac{1}{8}$" mtg/c.	Mounts resistors, capacitors and fuses	Loral part 68-9	Loral dwg 68-9
CR-101		CRYSTAL, Rectifier type: 1N34.	Rectifies RF	1N 34	JAN-1-A

MODEL: TEST INDICATOR BE-67-A

A-201		CABINET, Test Indicator BE-67-A; solid gum wood; exterior stained dark oak, lacquer, rubbed finish; interior stained dark oak, orange shellac; $7\frac{29}{32}$" lg x $5\frac{1}{4}$" d x $4\frac{13}{16}$" h overall; single leather handle on side of cover; hinges and snap included.	Houses BE-67-A	Loral part 68-75	Loral dwg 68-75
A-202		PANEL, front: $\frac{3}{16}$" thk x $3\frac{15}{16}$" wd x $7\frac{5}{8}$" lg; linen base phenolic per JAN-P-13; six 0.129" diam mtg holes.	Front panel for BE-67-A	Loral part 68-12	Loral dwg 68-12
E-201		KNOB: round; dural, black anodize; engraved radial indicator line; $\frac{1}{4}$" shaft size, $\frac{3}{8}$" deep hole; two socket head $\frac{1}{4}$" by #8-32, cup point set screws; $\frac{7}{8}$" diam by $\frac{5}{8}$" deep overall.	Knob for R-201	Loral part 24-37	Loral dwg 24-37
H-201	R16LOE-68-32	TOOL, adjusting: Linen base bakelite, spring steel blade; $3\frac{1}{2}$" lg x $\frac{1}{2}$" diam overall; straight knurled handle; TL-140.	Adjusting tool	Loral part 68-32	Loral 68-32
H-202		CLIP, tool: phosphor bronze, nickel plated; $\frac{3}{4}$" h x $\frac{7}{16}$" w x $\frac{15}{32}$" dp overall; .196" diam mtg hole.	Hold tool in case	Littelfuse XX105002	68-103
H-203		STUD, battery clamp: 24ST aluminum alloy rod; $\frac{1}{4}$" diam x $2\frac{5}{16}$" lg; tapped #4-40 x $\frac{7}{16}$" dp both ends.	Holds battery clamp	Loral part 68-22	Loral dwg 68-22

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TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST INDICATOR BE-67-A

Ref. Sym.	*Army/Navy Stock No.*	*Name of Part and Description*	*Function*	*Mfr. & Desig. or JAN Type*	*Cont. or Gov't Dwg. or Spec. No.*
H-204		CLAMP battery: .040″ phosphor bronze, cadmium plated; 2″ lg x 1 5/8″ wd x 3/16″ dp; 1/8″ diam mtg holes, 1 3/8″ mtg/c.	Holds BT-201, BT-202	Loral part 68-23	Loral dwg 68-23
J-201		JACK, telephone: for 2 conductor 0.1875″ diam plug; 1 1/8″ lg x 11/16″ OD x 3/16″ ID overall; J1 contact arrangement; includes two 11/16″ OD bakelite insulating bushing, one flat washer, one hex nut; 3/8″ mtg hole.	Connection for relay test	Mallory type SC-1A	Loral dwg 68-93
M-201	R16M3330	METER, milliammeter; DC; 0 to 1 ma; round bakelite flush mtg case; 3 1/2″ diam flange x 2 3/4″ body x 17/16″ d; 50 scale divisions; black numerals on white background; self contained; three mtg holes for #6-32 screw on 19/16″ radius spaced 120″ on mtg flange; two studs 3/4″ lg x 1/4″-28 thread, spaced 1 3/8″ apart.	Indicates relay current	Marion MR35W00-1DCMA	Loral dwg 68-116
N-201		NAMEPLATE, BE-67-A: 102011 aluminum alloy; 3″ lg x 2″ wd; (white border and characters reverse etched with black oxidized background; four .125″ diam mtg holes on corners).	Identification for BE-67-A	Loral part 68-67	Loral dwg 68-67
R-201	R16P6957-97	RESISTOR, variable: wire wound; 50,000 ohms; 3 watt; three terminals; body 1 5/8″ diam x 11/16″ dp; shaft 1/4″ diam x 3/8″ lg; bushing 5/16″ diam x 5/8″ lg; (enclosed molded bakelite body, metal cap on back; 2 hex mtg nuts furnished).	Regulates battery current	Clarostat 58WX	Loral dwg 68-37
S-201		SWITCH, toggle: SPDT; center off, momentary on one side; metal body with bakelite back; 1 3/8″ lg x 11/16″ wd x 1 7/8″ h overall; (switch lever extends into switch body; three terminals on back of switch, contact on each terminal with #6-32 screw; mtd by means of plate 2 1/16″ lg x 3/4″ w on front of switch).	Battery switch	AN 3022-6B	JAN-S-23

TABLE OF REPLACEABLE PARTS (Continued)

MODEL: TEST INDICATOR BE-67-C

Ref. Sym.	*Army/Navy Stock No.*	*Name of Part and Description*	*Function*	*Mfr. & Desig. or JAN Type*	*Cont. or Gov't Dwg. or Spec. No.*
A-201		CASE, Test Indicator BE-67-C; aluminum; light grey wrinkle finish, 8-3/32" h x 5-3/32" wd x 6⅜" d overall; single metal handle on side of cover; hinges and snap included.	Houses BE-67-C	Loral part 109176-000	Loral dwg 109176-000
A-202		PANEL front: 1/16" thk x 4-3/16" wd x 7-45/64" lg; aluminum; six 0.166" diam mtg holes.	Front panel for BE-67-C	Loral part 109175-000	Loral dwg 109175-000
E-201		KNOB: round; aluminum; dull, black anodize; engraved radial indicator line; ¼" shaft size, ⅞" deep hole; two socket head #8-32 by 5/16" lg half dog, point set screws; ⅞" diam by 11/16" deep overall.	Knob for R-201	Loral part 109164-000	Loral dwg 109164-000
H-201	R16LOE-68-32	TOOL, adjusting: Linen base bakelite, spring steel blade: 3½" lg x ½" diam overall; straight knurled handle; TL-140.	Adjusting tool	Loral part 103626-000	Loral dwg 103626-000
H-202		CLIP, tool; phosphor bronze, nickel plated; ¾" h x 7/16" w x 15/32" dp overall; .196" diam mtg hole.	Hold tool in case	Littelfuse XX105002	Loral dwg 115635-003
H-203		STANDOFF, battery clamp: 2011-T3 aluminum alloy rod; ¼" diam x 2-5/16" lg; tapped #4-40 x 7/16" dp both ends.	Holds battery clamp	Loral part 103619-000	Loral dwg 103619-000
H-204		CLAMP, battery: .040" phosphor bronze, cadmium plated; 2" lg x 1⅝" wd x 3/16" dp; ⅛" diam mtg holes, 1⅜" mtg/c.	Holds BT-201, BT-202	Loral part 103620-000	Loral dwg 103620-000
J-201		JACK, telephone: for 2 conductor 0.1875" diam plug; 1⅛" lg x 25/32" OD overall; J1 contact arrangement; includes two 11/16" OD bakelite insulating bushing, one flat washer, one hex nut; ⅜" mtg hole.	Connection for relay test	MIL-J-641A Type JJ-034	Loral dwg 103659-000
M-201	R16M3330	METER, milliammeter; DC; 0 to 1 ma; round bakelite flush mtg case; 3½" diam flange x 2¾" diam body x 1-29/32" d behind panel; 50 scale divisions; black numerals on white background; self contained; three mtg holes for #6-32 screw on 1-9/16" radius spaced 120° on mtg flange; two studs ¾" lg x ¼"-28 thread, spaced 1⅜" apart.	Indicates relay current	Marion MR35W00-1DCMA	Loral dwg 103689-000
N-201		NAMEPLATE, BE-67-C: 0.020" thk aluminum alloy ; 3" lg x 2" wd; (white border and characters reverse etched with black oxidized background; four .125" diam mtg holes on corners).	Identification for BE-67-C	Loral part 136771-000	Loral dwg 136771-000
R-201	R16P6957-97	RESISTOR, variable: wire wound; 50,000 ohms ±10%, linear taper; 3 watt; three terminals; body 1-11/16" diam x 29/32" dp; shaft ¼" diam x ⅜" lg; bushing 5/16" diam x 5/16" lg; (enclosed molded bakelite body, metal cap on back; 2 hex mtg nuts furnished).	Regulates battery current	Clarostat Series 58M	Loral dwg 109181-000
S-201		SWITCH, toggle; SPDT; center off, momentary on one side; metal body with bakelite back; 1⅜" lg x 11/16" wd x 1⅞" h overall; (switch lever extends into switch body; three terminals on back of switch, contact on each terminal with #6-32 screw; mtd by means of plate 2⅛" lg x ¾" w on front of switch).	Battery switch	ST-45H	Loral dwg 103666-000

CONTRACT NO. N-383-61638A.

SECTION VII

DRAWINGS

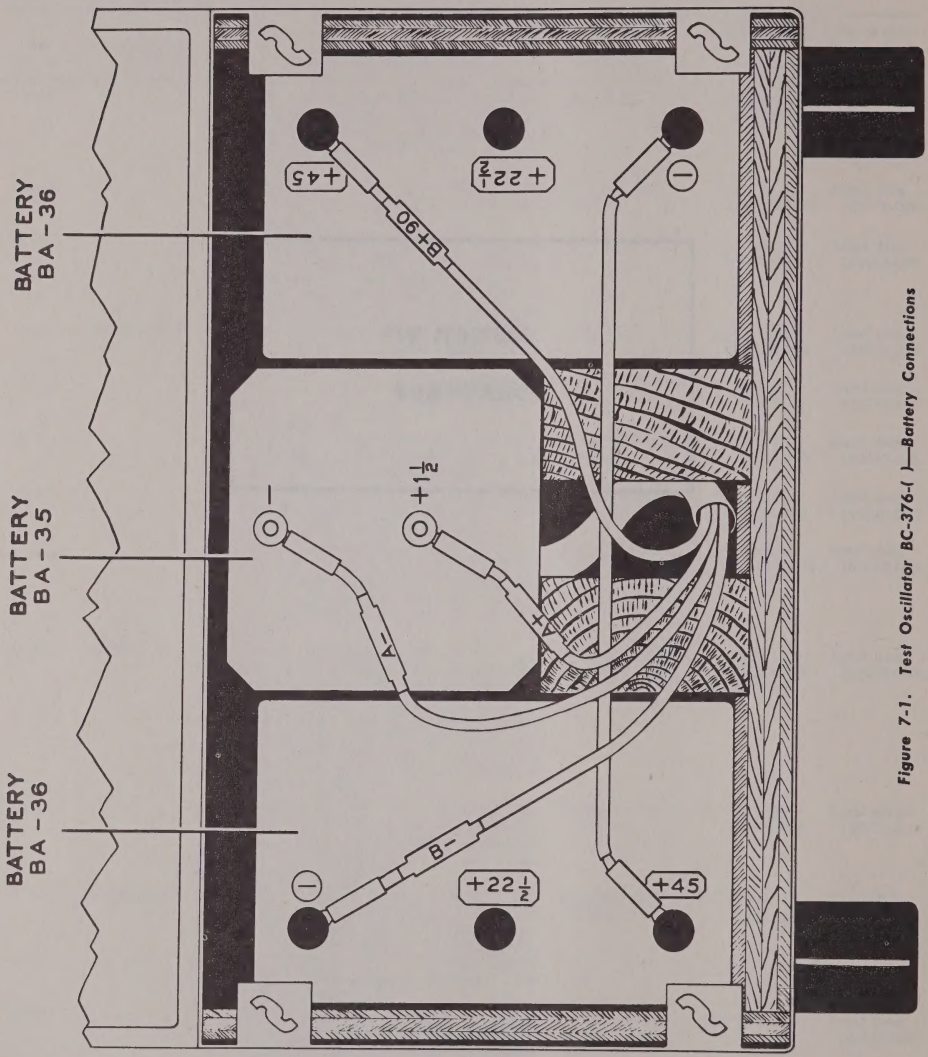


Figure 7-1. Test Oscillator BC-376-( )—Battery Connections

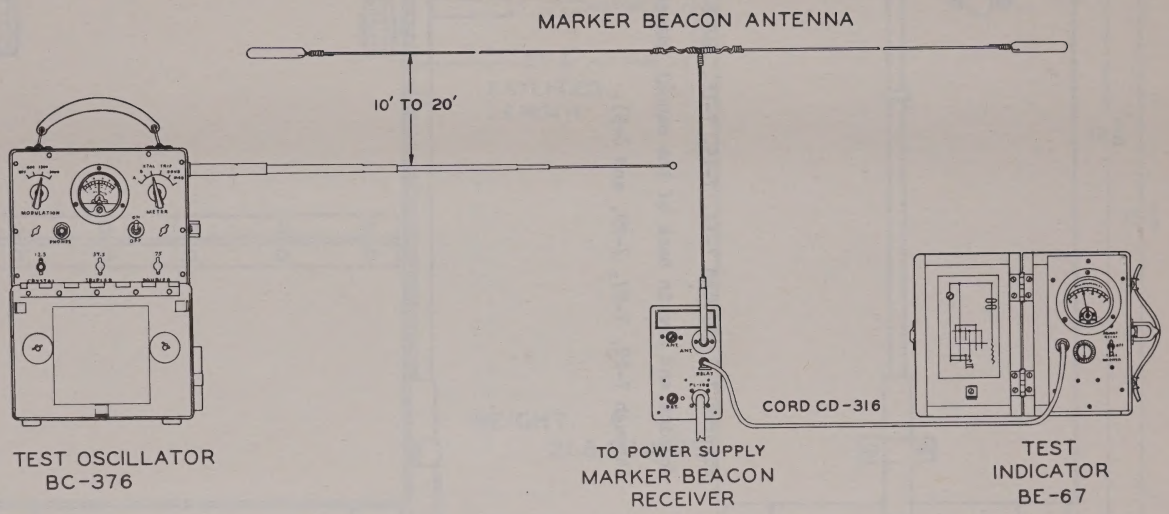


Figure 7-2. Test Set-Up of Test Oscillator BC-376-( ), Test Indicator BE-67, and Marker Beacon Receiver

Figures 7-3 through 7-11, 7-15, 7-16, and 8-1 are foldins and are in back of the manual (pages 7-5 through 7-22, 7-27, 7-29, and 8-5).

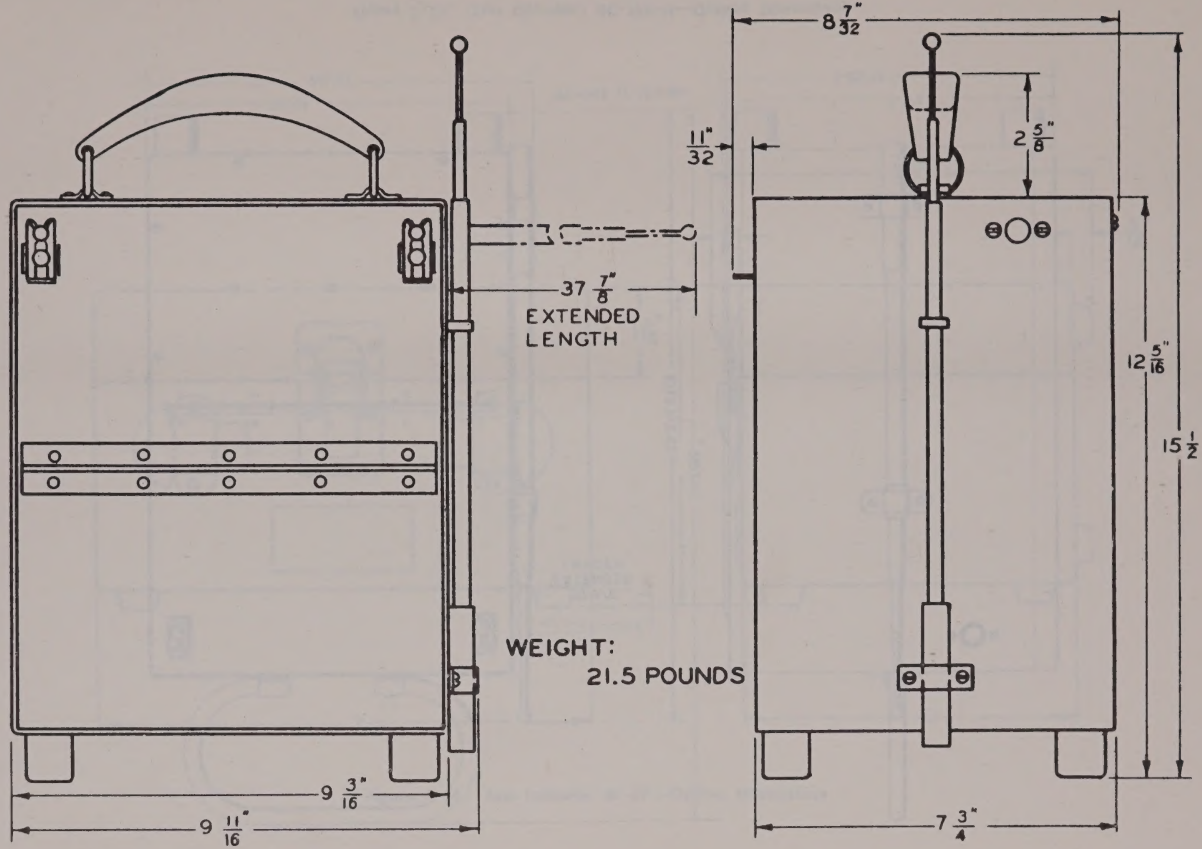


Figure 7-12. Test Oscillator BC-376-E—Outline Dimensions

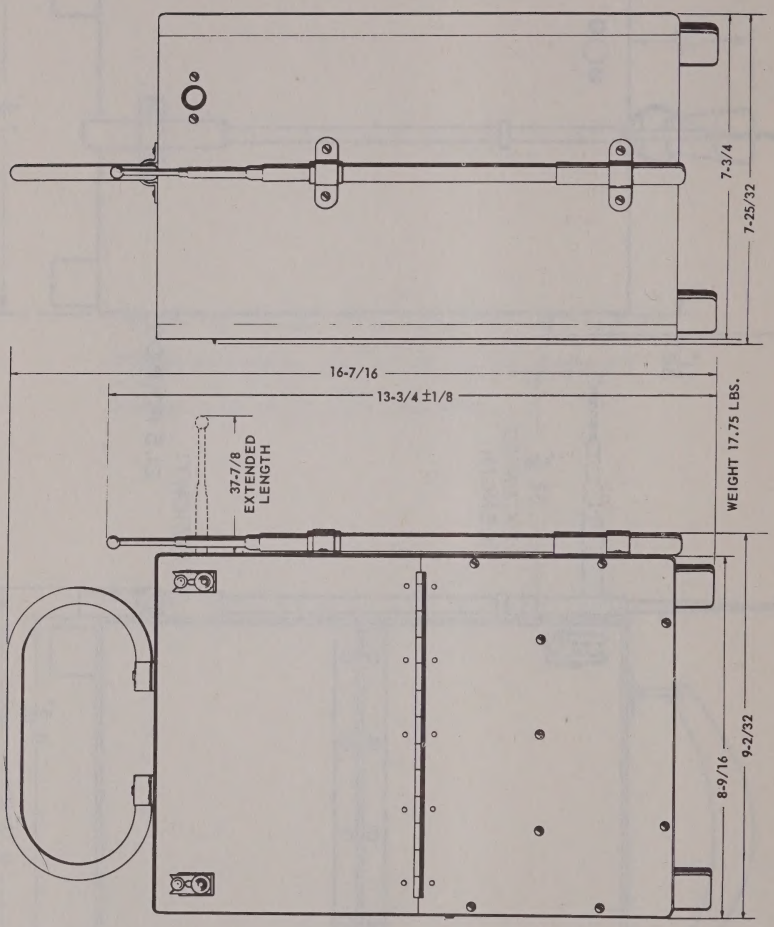


Figure 7-13. Test Oscillator BC-376-H—Outline Dimensions

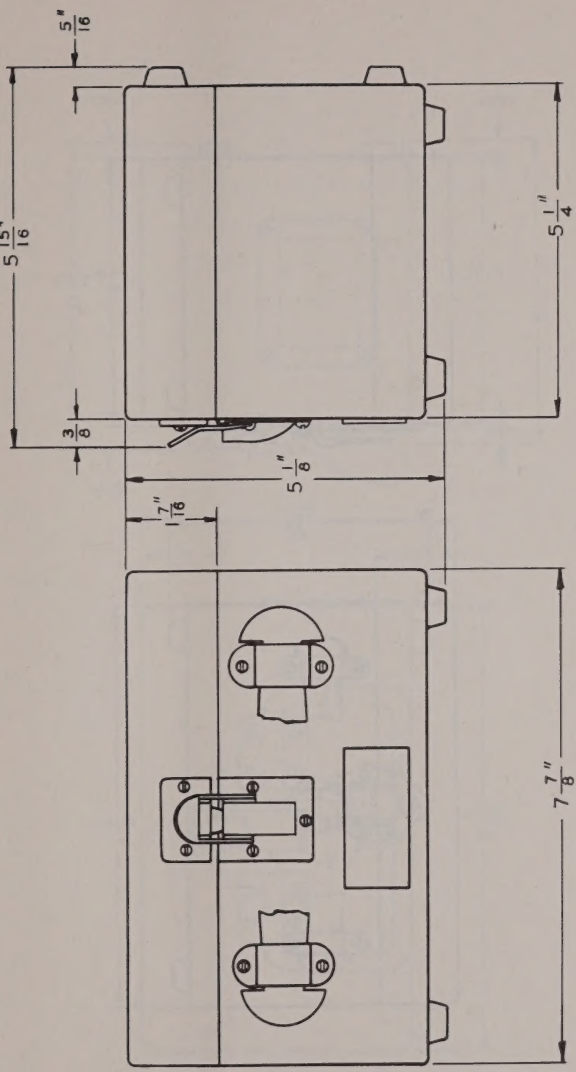


Figure 7-14. Test Indicator BE-67—Outline Dimensions

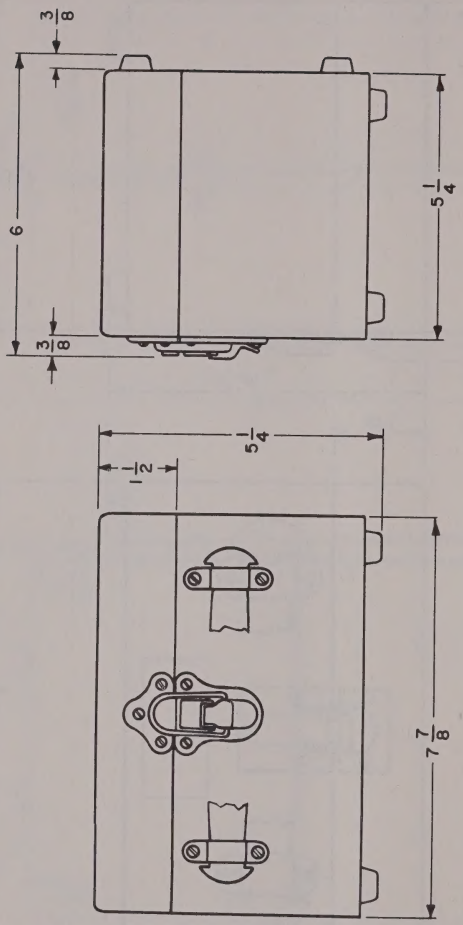


Figure 7-14A. Test Indicator BE-67-A—Outline Dimensions

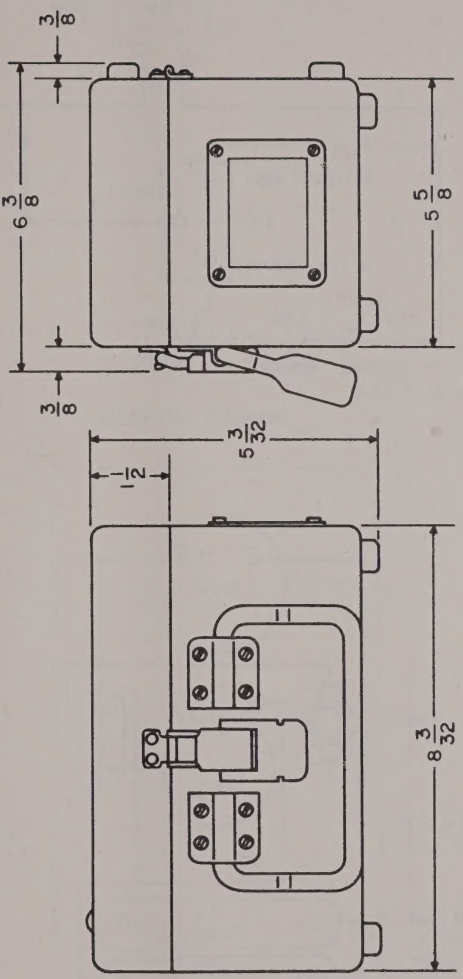
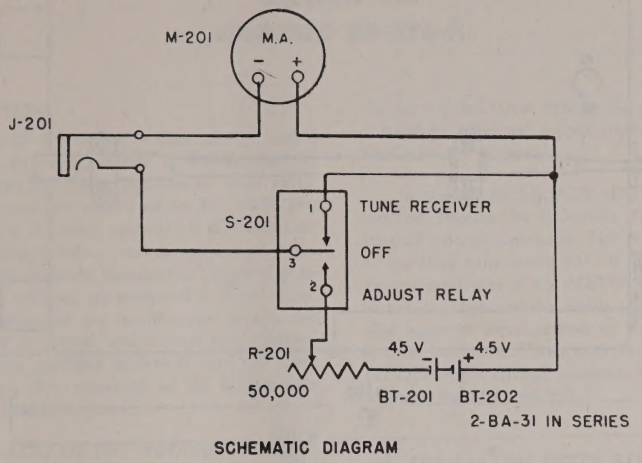


Figure 7-14B. Test Indicator BE-67-C—Outline Dimensions



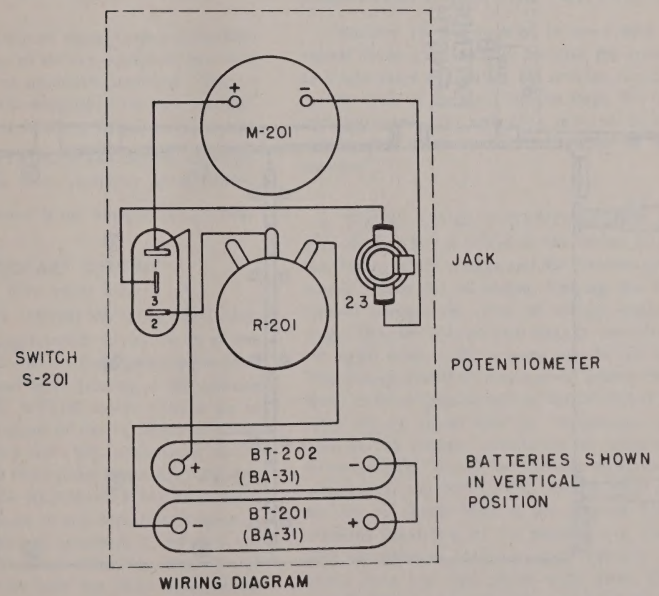


Figure 7-17. Test Indicator BE-67-A—Schematic and Wiring Diagram

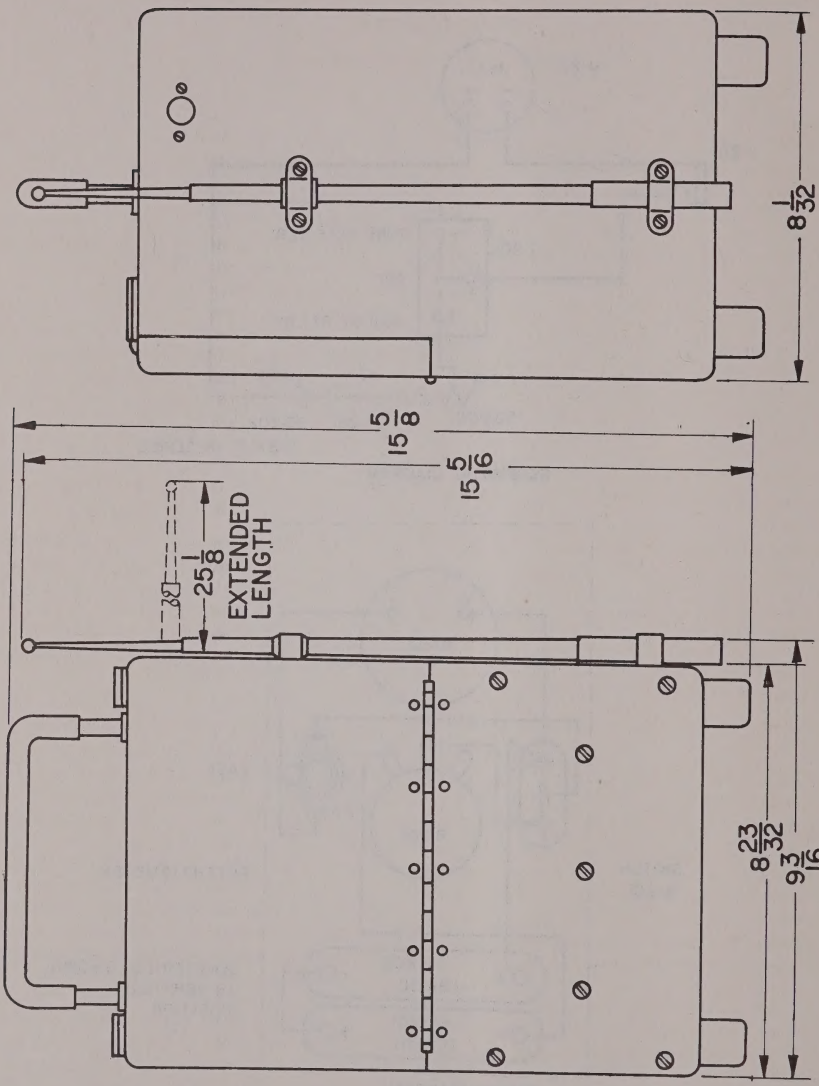


Figure 7-18. Test Oscillator BC-376-K—Outline Dimensions

SECTION VIII
MODIFIED BC-376-H

1. INTRODUCTION.

a. SCOPE AND CONTENT.—This section, added as an appendix to the Handbook of Maintenance Instructions for the BC-376-H Equipment, deals exclusively with the modified version of the BC-376-H Test Oscillator. Theory of circuit operation is discussed only to the extent where it differs from that presented in the Handbook of Maintenance Instructions proper. Operation and tuning methods are presented in detail. Complete data is presented on modification details. No attempt is made to present maintenance data. Maintenance data of the modified BC-376-H does not differ appreciably from that presented in the Maintenance Section of the handbook proper.

b. ADVANTAGES OF THE MODIFIED BC-376-H. The advantages offered by the modified version of the BC-376-H are:

(1) A known constant r-f signal output is obtained at the antenna regardless of battery conditions provided the batteries meet given minimum standards. Thus a standard reference level is established for "on the line" testing of any number of separate, identical equipments.

(2) Tuning of the TRIPLER and DOUBLER stages within the equipment is more accurately accomplished.

(3) Normal operation is not impaired in any way.

2. THEORY OF NECESSARY CIRCUIT ADDITIONS. (*See figure 8-1.*)

a. THE AUXILIARY METER SWITCH (58).—Addition of the DPDT toggle switch to the circuit of the BC-376-H permits the use of the front panel meter (51) to measure the r-f signal level existing at the antenna when the AUXILIARY METER switch (58) is set to the RF position. The output of the r-f filter, r-f choke (57) and capacitors (55) and (56), is connected to the positive terminal of the front panel meter (51) through terminals 1 and 3 of the AUXILIARY METER switch (58). The negative return of the front panel meter is returned to ground through terminals 2 and 4 of the AUXILIARY METER switch. Thus the front panel meter is inserted in series with the 1N34 crystal diode rectifier and the associated r-f filter and reads the rectified average value of the carrier. This application of the front panel meter enables the operator to establish a standard r-f signal output from the BC-376-H Test Oscillator for all tests.

Setting the AUXILIARY METER switch to NORM position restores the BC-376-H Test Oscillator to its original normal operation. The positive terminal post of the front panel meter (51) is connected to one common selector arm of the METER switch (47) through terminals 3 and 5 of the Auxiliary Meter Switch (58).* The negatives terminal post of the front panel meter is connected to the other common selector arm of the METER switch through terminals 4 and 6 of the AUXILIARY METER switch.*

b. THE CRYSTAL DIODE RECTIFIER (54) AND ASSOCIATED FILTER (55), (56), (57), AND (53).

Resistor (53) is inserted in series with the 1N34 crystal diode (54) rectifier to limit the crystal current to a safe value and isolate the rectifier circuit from the tuned circuit of the final Doubler stage. R-f choke (57) and capacitors (55) and (56) serve as an r-f filter to remove the carrier from the output of the crystal rectifier.

c. The RF LEVEL POTENTIOMETER (59).—Potentiometer (59) is added to the circuit in series with the B plus supply voltage and the common plate voltage supply source for all stages. Varying the RF LEVEL control changes the value of voltage applied to each stage. Thus the gain of each stage is controlled, and the r-f signal level at the antenna may be set accordingly. The voltage available from a given battery changes with time. In the original circuit of the BC-376-H Test Oscillator the r-f signal level at the antenna would vary with battery changes introducing an undesirable factor in establishing "on the line" testing standards. With the addition of the RF LEVEL control it is possible to set the r-f signal level at the antenna for a known standard regardless of the condition of the batteries. The only battery requirement is that the front panel meter does not read below 1.35 when the METER switch (47) is set to position A and the AUX. METER switch (58) is set to NORM; and with the METER switch set to position B, the front panel meter should not read below 70.

* The terminals of all switch contacts referred to in the text are conveniently numbered in order to clarify the text. See figure 8-1.

3. LIST OF MATERIALS AND PARTS REQUIRED FOR BC-376-H MODIFICATION.

Item No.	*Description*	*ASO Stock Number*	*Alternative*
53	Resistor, 2200 ohm, ½ watt, composition ±10%	R16-R-17273-45	R-220, AN/APX-2
54	Crystal, 1N34, Sylvania	16-T-51734	CR-101, AN/APR-15
55	Capacitor, 100 uuf, mica, 500 v. ±10%	R-16-C-9924-59	C-237, AN/APX-2
56	Capacitor, 100 uuf, mica, 500 v. ±10%	R-16-C-9924-59	C-237, AN/APX-2
57	RF Choke, 50 uh, 33 ma	R16-HZL-A2224	L-202, AN/APX-2
58	Switch, toggle, DPDT	16-S-10715	S(3)6, AN/APS-4
59	Potentiometer, 2000 ohm, 1 watt, composition	R16-P-5582-125	R-240, AN/APX-2
	Knob, round, black, ⅝″ diam., ¼″ shaft	R16-K-3343-500	Any small knob.
	Terminal strip, 4-lug, JFD Type 53-4		Any 4-lug strip.
	Lug. soldering, ICA 5646 (2 required)		Any small ground lug.
	Wire, No. 22 flexible hook-up. tinned		
	Screw, round head, 6-32, ⅜″ long (2 required)	R-43-S-216282	Any short 6-32 screw
	Nut, 6-32 (2 required)	R-43-N-41025	Any 6-32 nut
	Lockwasher, #6, internal teeth (2 required)	R-43-W-75454	Any #6 Lockwasher

4. DETAILED MODIFICATION INSTRUCTIONS FOR THE BC-376-H TEST OSCILLATOR.

a. Disconnect the antenna and power cables from the BC-376-H chassis, and remove the chassis from its case.

b. Remove the 12.5 megacycle crystal, the front panel meter, and all tubes from the chassis.

c. Locate and drill holes for the potentiometer (59), the DPDT toggle switch (58) and the 4-lug terminal strip. See figure 8-2.

d. Prepare the nameplates as directed in figure 8-2.

e. Solder the 1N34 crystal (54), the r-f choke (57), capacitors (55) and (56), the 2200 ohm, one-half watt resistor (53), and approximately seven and one-half inches of No. 22 flexible hook-up wire to the four lug terminal strip in accordance with the sectional schematic diagram shown in figure 8-3.

f. Add the ground lug (top chassis) and secure the 4-lug terminal strip in position with the 6-32 screws and nuts. (See figures 8-4 and 8-5.)

g. Mount the toggle switch (58) and its nameplate in postion on the front panel of the equipment.

h. Connect the seven and one-half inch lead from the r-f choke on the terminal strip to terminal 1 of the toggle switch. Route the lead along the path occupied by the existing cabling. See figures 8-4 and 8-5.

i. Connect and solder the 2200 ohm resistor (53) between the positive terminal of the 1N34 crystal and the BC-376-H antenna cable socket. (See figure 8-5.)

j. Cut the existing meter leads approximately two and one-half inches back of the meter connecting lugs. Mount the meter (51) on the front panel.

k. Connect and solder the two and one-half inch length of the "white with black tracer" meter lead between the negative terminal post of the meter and terminal 4 of the toggle switch. (See figure 8-4.)

l. Solder the two and one-half inch length of the "white with red tracer" meter lead between the positive terminal post of the meter and terminal 3 of the toggle switch. (See figure 8-4.)

m. Solder the free end of the remaining length of the "white with black tracer" meter lead to terminal 6 of the toggle switch. Check the continuity of this lead between terminal 6 of the toggle switch and the common selector arm (#2)* of the METER selector switch (47). (See figure 8-4.)

n. Solder the free end of the remaining length of the "white with red tracer" meter lead to terminal 5 of the toggle switch (58). Check the continuity of this lead between terminal 5 of the toggle switch and the common selector arm (#1)* of the other section of the METER selector switch (47). (See figure 8-4.)

o. Connect a lead from terminal 2 of the toggle switch (58) and the ground lug mentioned in step 4.f. above. (See figure 8-4.)

p. Mount the RF LEVEL potentiometer (59) and its nameplate on the front panel. (See figure 8-2.)

q. Remove the retaining screws holding the large fiber mounting board. Lift the mounting board up and out in order that connections may be made underneath. (See figure 8-5.)

r. Remove the bare wire jumper between the B plus fuse (49) and the common junction of the four 15-ohm resistors. (See figure 8-5.)

s. Connect one 16″ length of hook-up wire to the B plus fuse (49). Connect a second 16″ length to the B plus lead at the junction of the four 15-ohm resistors. Twist the two leads together over their entire length. (See figure 8-5.)

t. Route the twisted lead from the fiber mounting board through and underneath the TRIPLER and DOUBLER tuning capacitors to the RF LEVEL potentiometer. (See figure 8-5.)

* The terminals of all switch contacts referred to in the text are conveniently numbered in order to clarify the text. See figure 8-1.

u. Check the continuity of the lead from the B plus fuse (49), and solder the free end to the outer arm of the RF LEVEL potentiometer. (See figure 8-5.)

v. Solder the other free end of the twisted pair to the remaining two arms of the RF LEVEL potentiometer.

Note

The RF LEVEL potentiometer is wired properly when a decreasing resistance is noted between its terminals with clockwise rotation of the RF LEVEL control.

w. Replace the fiber mounting board and secure with the screw removed in step 4.q.

x. Replace the 12.5 megacycle crystal and all tubes in their respective sockets.

y. Replace the chassis in the case. Connect the antenna and power cables.

z. Perform all the checks detailed in paragraph 8-5 and 8-6.

5. BATTERY VOLTAGE CHECK.

a. Check the condition of the "A" and "B" batteries as follows:

(1) Set the POWER switch to ON.

(2) Set the AUX. METER switch to NORM.

(3) Set the METER Switch to position A. Replace the "A" battery when the front panel meter reads below 1.35.

(4) Set the METER switch to position B. Replace the "B" battery when the front panel meter reads below 70.

(5) Set the POWER switch to OFF.

6. TUNING THE BC-376-H MODIFIED TEST OSCILLATOR.

Accurate tuning of the circuits is easily and accurately accomplished by following the step by step procedure below. Insert the antenna in the radiator socket and extend full length.

a. Set the POWER Switch to ON.

b. Set the MODULATION switch to OFF.

c. Set the METER switch to XTAL.

d. Turn the RF LEVEL control fully clockwise.

e. Set the AUX. METER switch to NORM.

f. Adjust the capacitor marked CRYSTAL 12.5 until a sharp dip in plate current is indicated on the front panel meter. Record the meter reading.

g. Tune the capacitor marked CRYSTAL 12.5 off resonance on the broad tuning side until the meter reads approximately .5 ma greater than the value recorded in step 6.f.

Note

The meter reading increases gradually when tuning on the proper side of resonance and sharply on the other side.

h. Set the AUX. METER switch to RF.

i. Tune the capacitors marked TRIPLER 37.5 and DOUBLER 75 for a maximum reading on the front panel meter.

j. Adjust the RF LEVEL control until the front panel meter reads exactly at mid-scale.

k. Set the POWER switch to OFF.

7. OPERATING THE MODIFIED BC-376-H TEST OSCILLATOR.

Follow the procedure outlined below to operate the test oscillator.

a. Insert the antenna in the radiator socket on the right side of the case.

b. Set the POWER switch to ON.

c. Set the AUX. METER switch to RF.

d. Set the MODULATION switch to the desired frequency.

e. Adjust the RF LEVEL control until the meter reads at exact mid-scale.

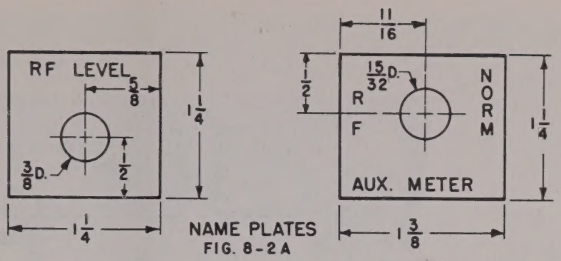
Note

Perform the tuning procedure outlined in paragraph 6 when it is impossible to obtain a mid-scale reading.

f. Place the BC-376-H approximately seven feet from the antenna of the equipment under test. Orient the antenna to be parallel to the antenna of the equipment under test.

g. The Marker Beacon Receiver Indicator should flash on.

h. Set the POWER switch to OFF.

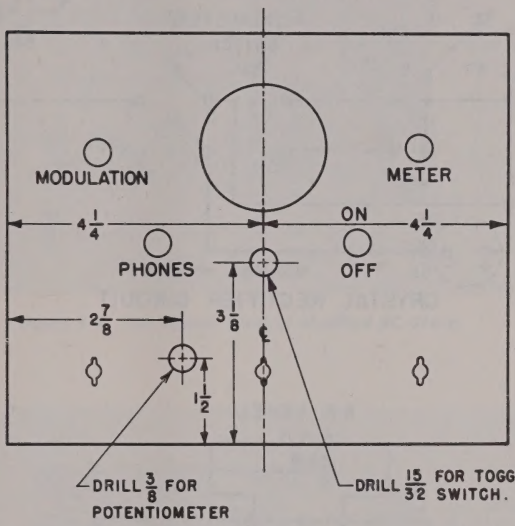


NOTES:

1: MAKE LETTERS 1/8 HIGH AND SPACED 1/16 FROM ADJACENT EDGE.

2: BACKGROUND DULL BLACK. LETTERS WHITE.

3: MATERIAL - THIN ALUMINUM OR STEEL.



FRONT VIEW OF PANEL
FIG. 8-2B

TOP VIEW OF CHASSIS
FIG. 8-2C

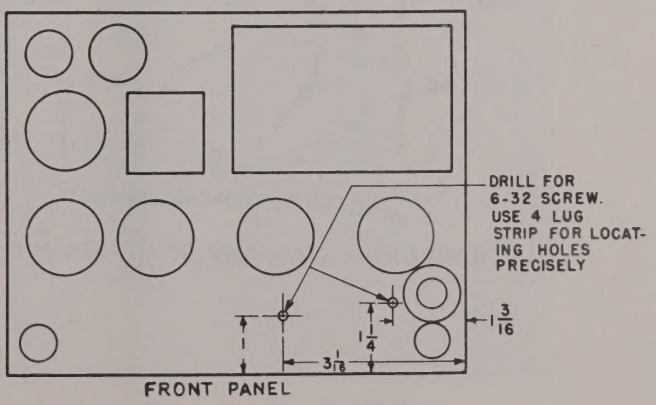
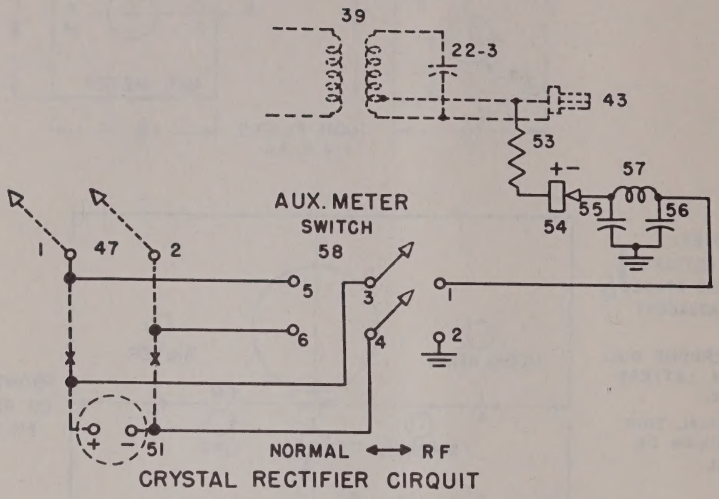
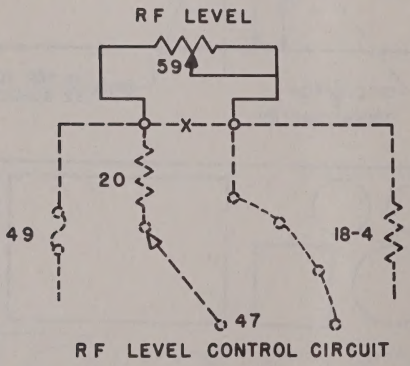


Figure 8-2. Front Panel Control Locations—(BC-376-H Modification)





SCHEMATIC DIAGRAMS OF BC-376-H CHANGES.

Figure 8-3. Sectional Schematic—(BC-376-H Modification)

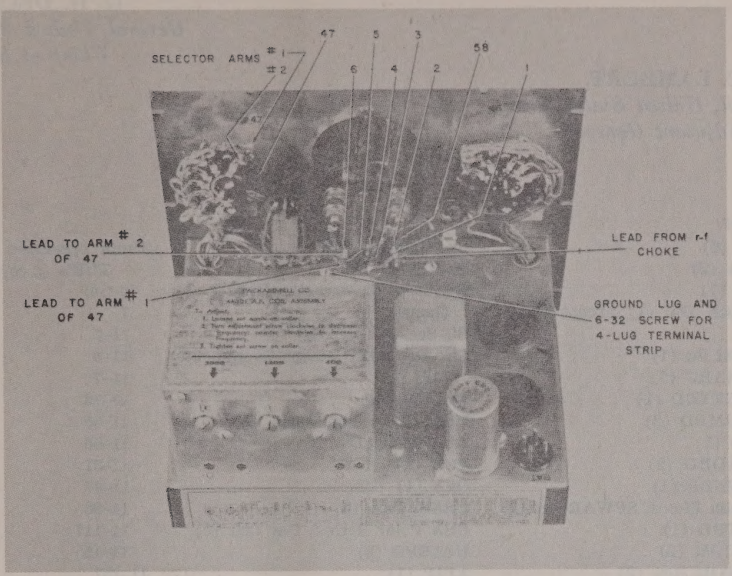


Figure 8-4. Top Chassis View of Modified BC-376-H

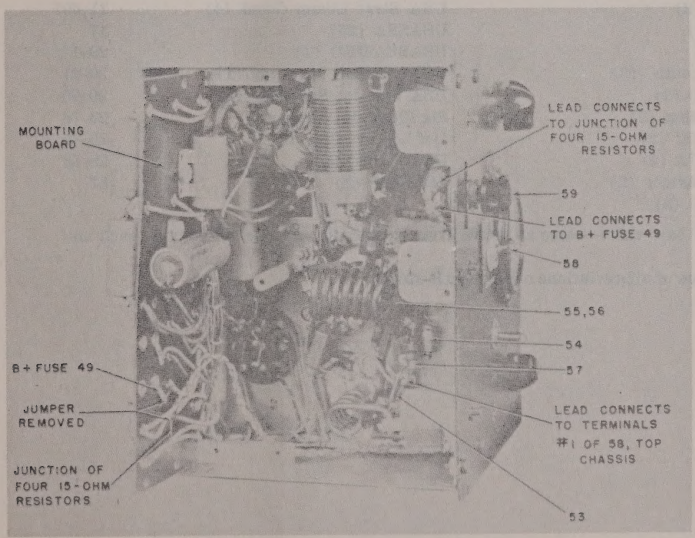


Figure 8-5. Bottom Chassis View of Modified BC-376-H

By Order of the Secretary of the Army:

G. H. DECKER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

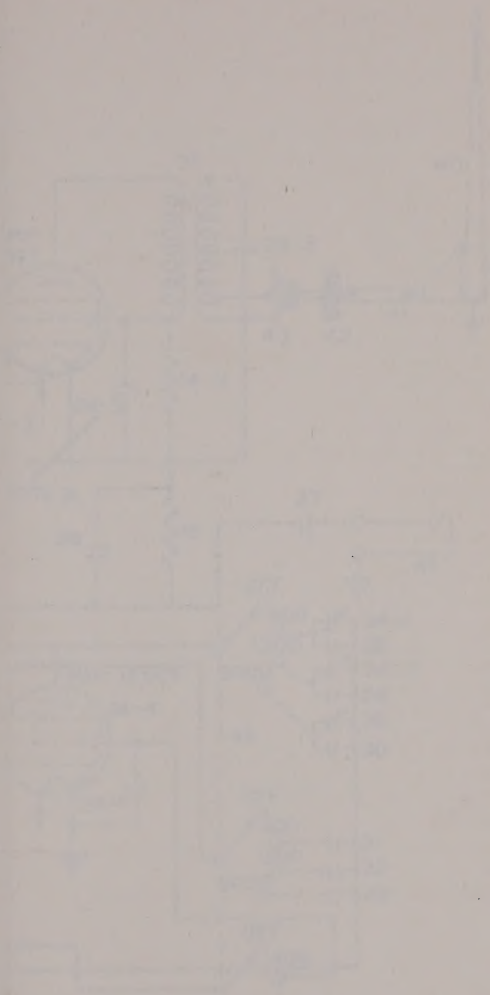
Distribution:

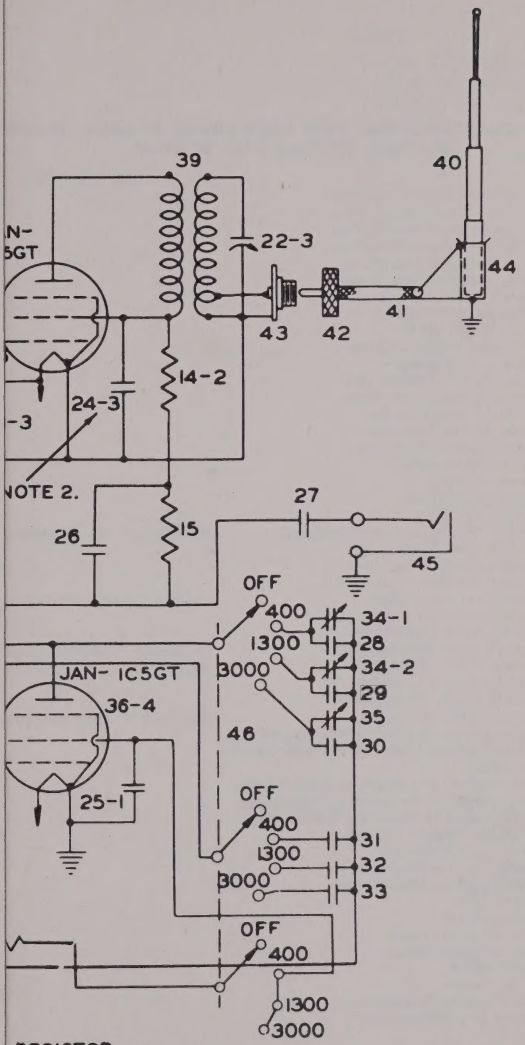
Active Army:

DASA (6)
USASA (2)
CNGB (1)
Tech Stf, DA (1) except CSigO (14)
Tech Stf Bd (1)
USCONARC (5)
USAARTYBD (1)
USAARMBD (2)
USAIB (1)
USARADBD (2)
USAAVNBD (1)
USA Abn Elct & SPWAR Bd (1)
USAATBD (1)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (3)
OS Base Comd (2)
LOG Comd (2)
MDW (1)
Armies (2)
Corps (2)
Instl (2)
Ft Monmouth (63)
USAT AD (2)
USATC Eng (2)
USATC Inf (2)
USATC FA (2)
USATC Armor (2)
USAOMC (2)
Svc Colleges (2)
Br Svc Sch (2)
Gen Dep (2) except Atlanta (none)
Sig Sec, Gen Dep (5)
Sig Dep (12) except Sacramento (17)
WRAMC (1)
USA Trans Tml Comd (1)
Army Tml (1)
POE (1)
OSA (1)
USASATSA (5)
USA Polar Rsch & Dev Cen (5)
USAEPG (2)
AFIP (1)
AMS (1)
Army Pictorial Cen (2)
EMC (1)
Yuma Test Sta (2)
USA Strat Comm Comd (4)
USASSA (25)
USASSAMRO (1)
USARCARIB Sig Agcy (1)
USA Sig Msl Spt Agcy (13)
Sig Fld Maint Shops (3)
Def Log Svc Cen (1)
USA Corps (3)
JBUSMC (2)
Units organized under follow TOE's (2 copies each):
6–545
7
11–5
11–6
11–7
11–16
11–55
11–56
11–57
11–97
11–98
11–117
11–155
11–157
11–500 (Tms AA–AE)
11–557
11–587
11–592
11–597
17
29–1
29–21
29–25
29–26
29–35
29–36
37

NG: State AG (3); units—same as active army except allowance is one copy to each unit.
USAR: None.
For explanation of abbreviations used, see AR 320–50.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1962 O—657843





RESISTOR
-376-A.

4-1 IN BC-376-B.

6-A, BC-376-B, BC-376-C, BC-376-D, and
iagram (with exceptions noted)

CIRCUIT CONSTANTS FOR TEST OSCILLATOR BC-376-A, BC-376-B, BC-376-C, BC-376-D AND BC-376-E

	EXCEPTIONS	
1. B+ Battery Connection on Plug		
2. B— Battery Connection on Plug		
3. A+ Battery Connection on Plug		
4. A— Battery Connection on Plug		
5. Battery Connector Plug (Male)		
6. Battery Connector Plug (Female)		
7. 20-Inch 4-Wire Cable		
8. 1.5-Volt Battery BA-35		
9. 45-Volt Battery BA-36		
10. 12.5-Megacycle Quartz Crystal		
11. 5-Prong Crystal Socket		
12. Resistor, ½ watt, 100,000 ohms		
13. Resistor, ½ watt, 50,000 ohms		
14. Resistor, ½ watt, 250 ohms		
15. Resistor, ½ watt, 5000 ohms		
16. Resistor, ½ watt, 25,000 ohms		
17. Resistor, 50,000 ohms		
18. Resistor, 15 ohms		
20. Resistor, 100,000 ohms		
21. Resistor, 1865 ohms		
22. Capacitor, Tuning, 25 Micromicrofarads	BC-376-A	27 Micromicrofarads
23. Capacitor, 0.002 Microfarads		
24. Capacitor, 0.0001 Microfarads		
25. Capacitor, 0.9 Microfarads		
26. Capacitor, 0.4 Microfarads	BC-376-A	0.50 Microfarads
27. Capacitor, 0.25 Microfarads		
28. Capacitor, 0.054 Microfarads		
29. Capacitor, 0.009 Microfarads	BC-376-A	0.0085 Microfarads
30. Capacitor, 0.002 Microfarads	BC-376-A	0.0029 Microfarads
31. Capacitor, 0.016 Microfarads		
32. Capacitor, 0.0042 Microfarads		
33. Capacitor, 0.002 Microfarads	BC-376-A	0.001 Microfarads
34. Capacitor, Trimmer, 660-2100 Micromicrofarads		
35. Capacitor, Trimmer, 480-1640 Micromicrofarads		
36. Tube Socket		
37. Inductance Coil, 12.5 Megacycle, Crystal Stage		
38. Inductance Coil, 37.5 Megacycle, Tripler Stage		
39. Inductance Coil, 75 Megacycle, Doubler Stage		
40. Telescoping Radiator Antenna		
41. Flexible Transmission Line		
42. Transmission Line Plug (Male)		
43. Transmission Line Plug (Female)		
44. Radiator Socket		
45. Headphone Jack		
46. 3-Pole, 4-Position Switch		
47. 2-Pole, 6-Position Switch		
48. D.P.S.T. Switch		
49. Fuse, ⅛ Ampere		
50. Audio Frequency Transformer		
51. Ammeter (0-1 Milliampere)		

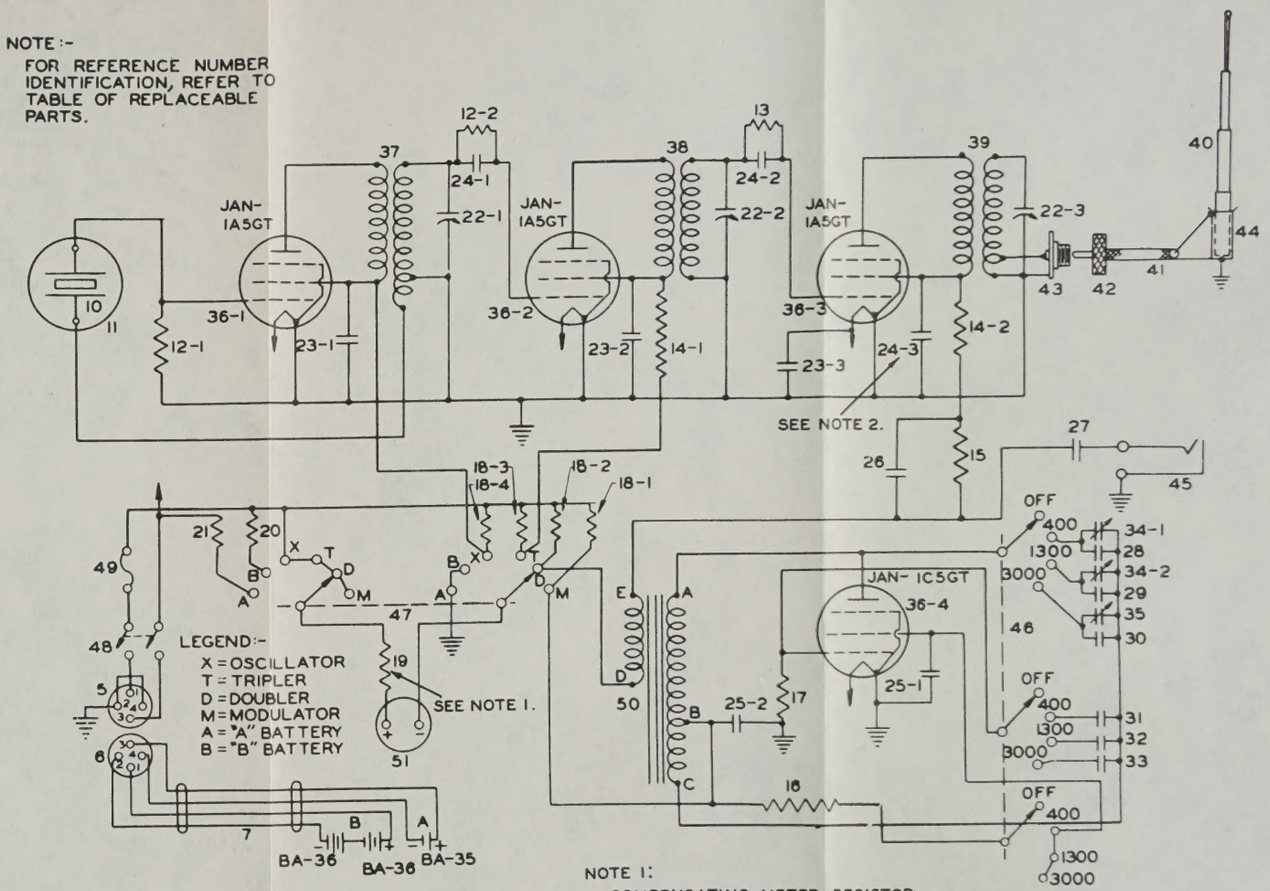
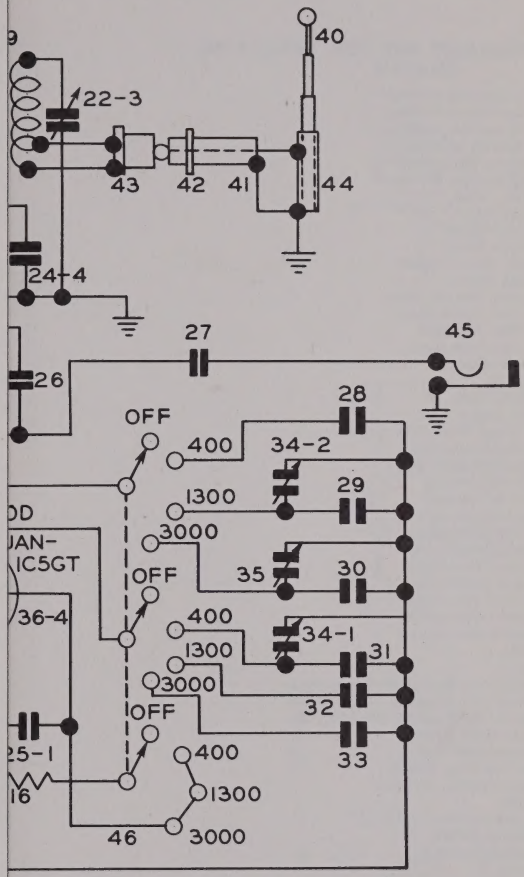


Figure 7-3. Test Oscillator BC-376-A, BC-376-B, BC-376-C, BC-376-D, and BC-376-E—Schematic Diagram (with exceptions noted)



...st Oscillator BC-376-F and BC-376-G—Schematic Diagram

CIRCUIT CONSTANTS FOR TEST OSCILLATOR BC-376-H

1. B+ Battery Connection on Plug
2. B− Battery Connection on Plug
3. A+ Battery Connection on Plug
4. A− Battery Connection Plug
5. Battery Connector Plug (Male)
6. Battery Connector Plug (Female)
7. 24-Inch, 4-Wire Cable
8. 1.5-Volt Battery BA-35
9-1. 45-volt Battery BA-36
9-2. 45-Volt Battery BA-36
10. 12.5-Megacycle Quartz Crystal
11. 5-Prong Crystal Socket
12. Resistor, ½ watt, 100,000 ohms
13. Resistor, ½ watt, 50,000 ohms
14. Resistor, ½ watt, 250 ohms
15. Resistor, ½ watt, 5000 ohms
17. Resistor, 50,000 ohms
18. Resistor, 15 ohms
20. Resistor, 100,000 ohms
21. Resistor, 1865 ohms
22. Capacitor, Tuning, 25 Micromicrofarads
23. Capacitor, 0.002 Microfarads
24. Capacitor, 0.0001 Microfarads
25. Capacitor, 0.9 Microfarads
26. Capacitor, 0.4 Microfarads
27. Capacitor, 0.25 Microfarads
28. Capacitor, 0.058 Microfarads
29. Capacitor, 0.004 Microfarads
30. Capacitor, 0.013 Microfarads
31. Capacitor, 0.020 Microfarads
32. Capacitor, 0.0032 Microfarads
33. Capacitor, 0.0013 Microfarads
34. Capacitor, 0.0027 Microfarads
35. Socket, Bakelite
36. Socket, Ceramic
37. Inductance Coil, 12.5 Megacycle, Crystal Stage
38. Inductance Coil, 37.5 Megacycle, Tripler Stage
39. Inductance Coil, 75 Megacycle, Doubler Stage
40. Telescoping Radiator Antenna
41. Flexible Transmission Line
42. Transmission Line Plug (Male)
43. Transmission Line Plug (Female)
44. Radiator Socket
45. Headphone Jack
46. 3-Pole, 4-Position Switch
47. 2-Pole, 6-Position Switch
48. D.P.S.T. Switch
49. Fuse, ⅛ Ampere
50. Modulation Transformer
51. Meter (0-1 Milliampere)
52. Audio Frequency Coil Assembly

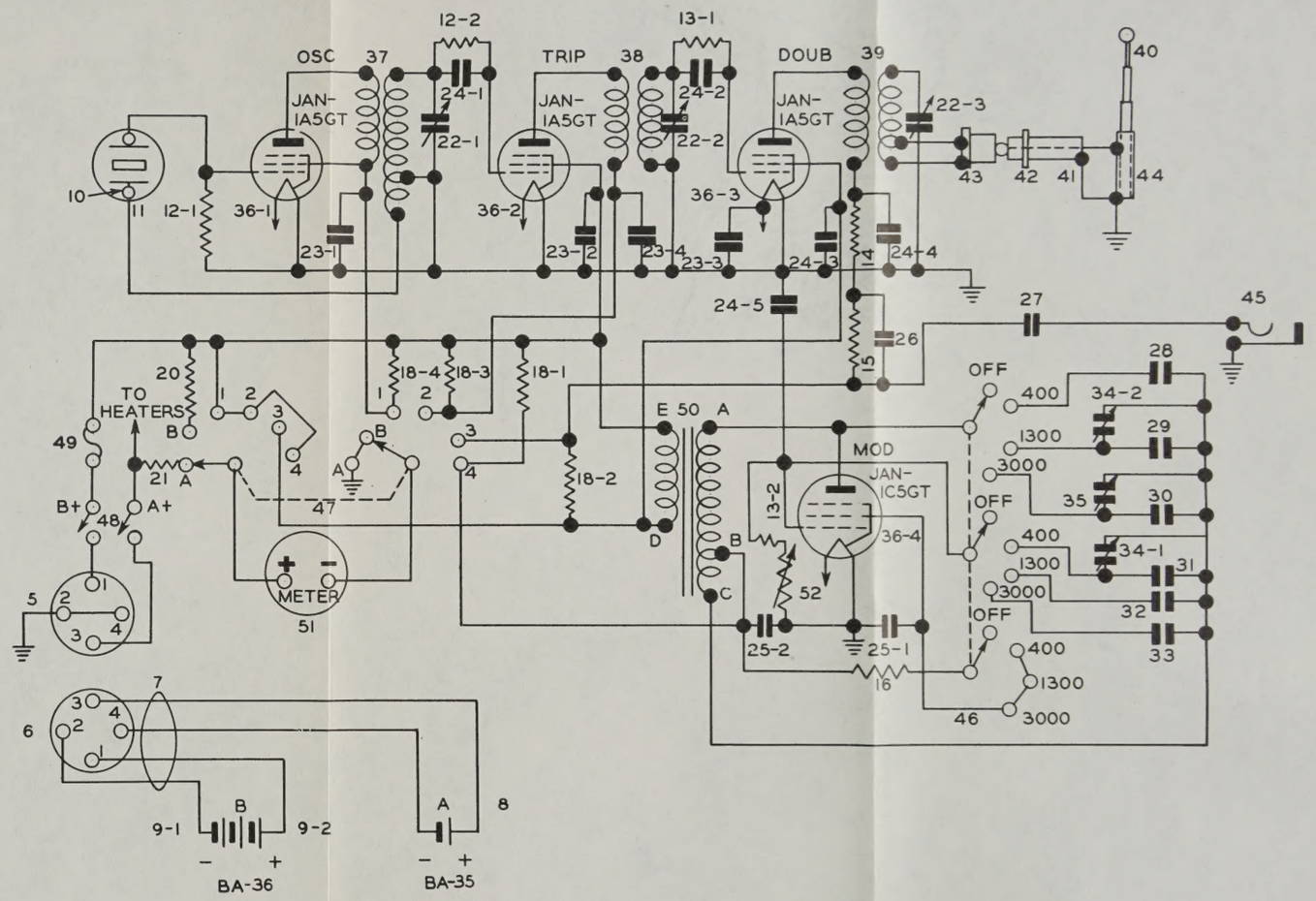
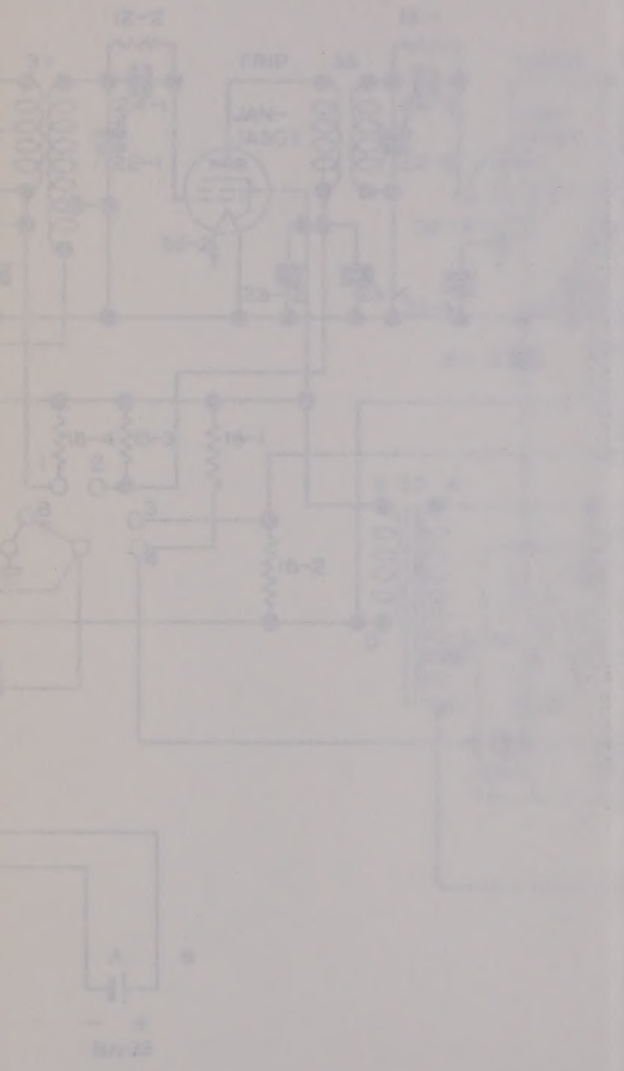
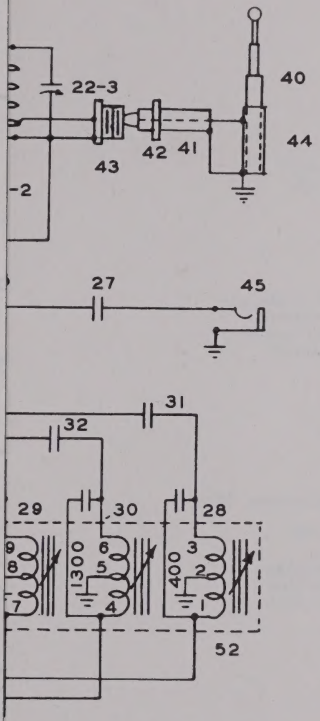


Figure 7-4. Test Oscillator BC-376-F and BC-376-G—Schematic Diagram





Test Oscillator BC-376-H—Schematic Diagram

CIRCUIT CONSTANTS FOR TEST OSCILLATOR BC-376-F AND BC-376-G

1. B+ Battery Connection on Plug
2. B— Battery Connection on Plug
3. A+ Battery Connection on Plug
4. A— Battery Connection on Plug
5. Battery Connector Plug (Male)
6. Battery Connector Plug (Female)
7. 20-Inch, 4-Wire Cable
8. 1.5-Volt Battery BA-35
9. 45-Volt Battery BA-36 (2 required)
10. 12.5-Megacycle Quartz Crystal
11. 5-Prong Crystal Socket
12. Resistor, ½ watt, 100,000 ohms (2 required)
13. Resistor, ½ watt, 50,000 ohms (2 required)
14. Resistor, ½ watt, 250 ohms
15. Resistor, ½ watt, 7.500 ohms
16. Resistor, ½ watt, 25,000 ohms
18. Resistor, 15 ohms (4 required)
20. Resistor, 100,000 ohms
21. Resistor, 1865 ohms
22. Capacitor, Tuning, 25 Micromicrofarads (3 required)
23. Capacitor, 0.002 Microfarads, Mica (4 required)
24. Capacitor, 0.0001 Microfarads, Mica (5 required)
25. Capacitor, 0.9 Microfarads, Paper (2 required)
26. Capacitor, 0.4 Microfarads, Paper
27. Capacitor, 0.25 Microfarads, Paper
28. Capacitor, 0.05 Microfarads, Paper
29. Capacitor, 0.009 Microfarads, Mica
30. Capacitor, 0.002 Microfarads, Mica
31. Capacitor, 0.015 Microfarads, Mica
32. Capacitor, 0.004 Microfarads, Mica
33. Capacitor, 0.002 Microfarads, Mica
34. Capacitor, Trimmer, 660-2100 Micromicrofarads, Mica (2 required)
35. Capacitor, 480-1640 Micromicrofarads, Mica
36. Tube Socket (4 required)
37. Inductance Coil, 12.5 Megacycle, Crystal Stage
38. Inductance Coil, 37.5 Megacycle, Tripler Stage
39. Inductance Coil, 75 Megacycle, Doubler Stage
40. Telescoping Radiator Antenna
41. Flexible Transmission Line
42. Transmission Line Plug (Male)
43. Transmission Line Plug (Female)
44. Radiator Socket
45. Headphone Jack
46. 3-Pole, 4-Position Switch
47. 2-Pole, 6-Position Switch
48. D.P.S.T. Switch
49. Fuse, ⅛ Ampere
50. Audio Frequency Transformer
51. Ammeter (0-1 Milliampere)
52. Rheostat, 5000 ohms

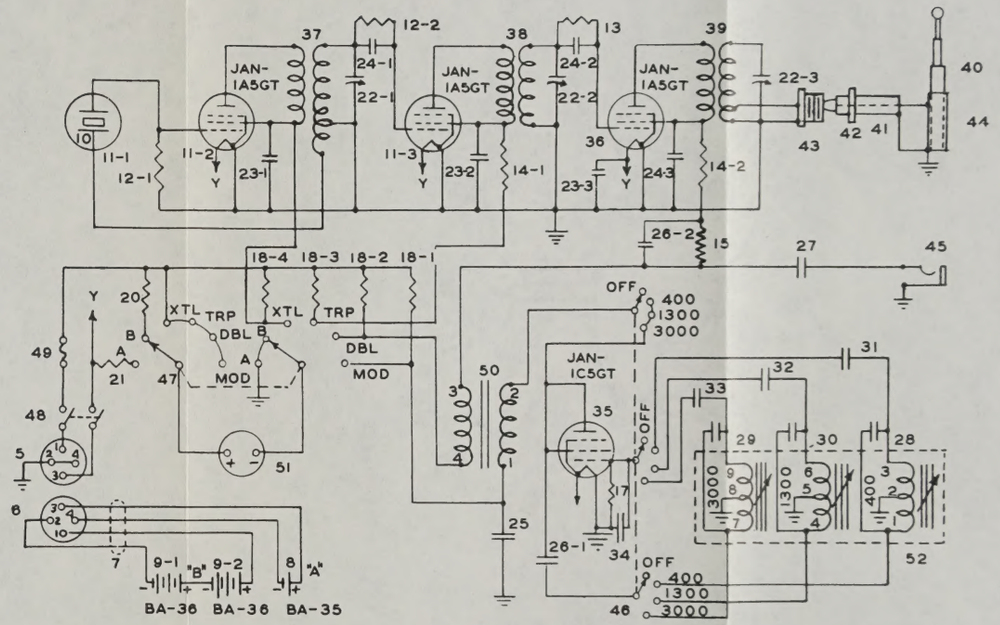


Figure 7-5. Test Oscillator BC-376-H—Schematic Diagram

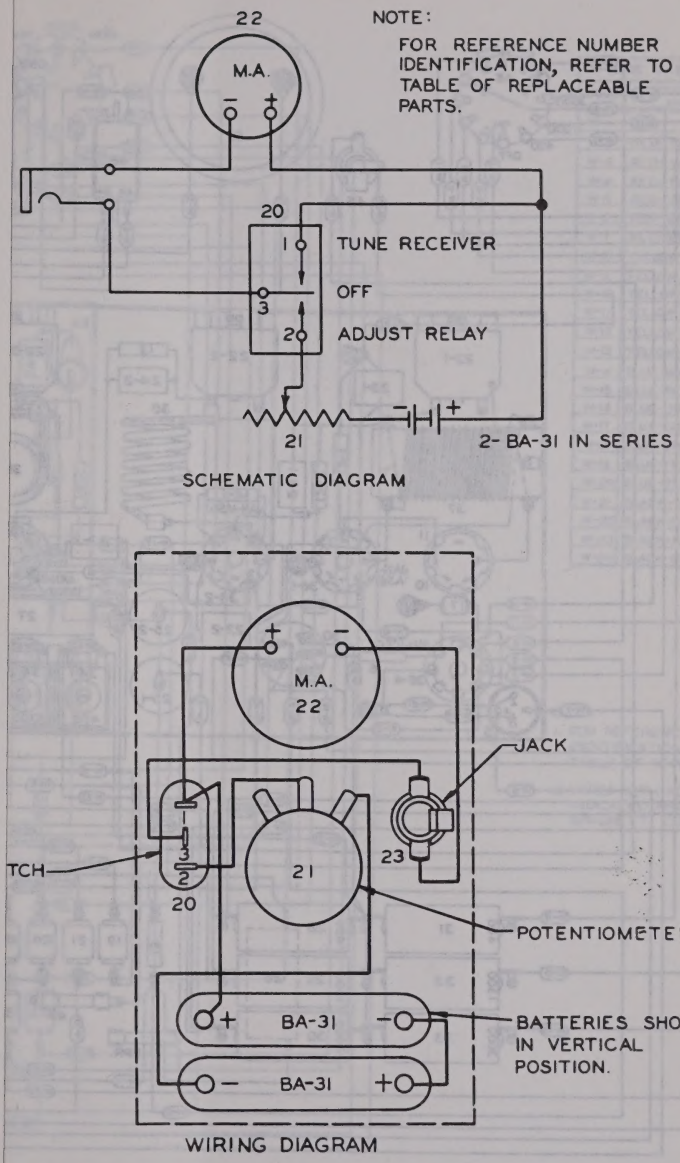


Figure 7-6. Test Indicator BE-67—Schematic and Wiring Diagram

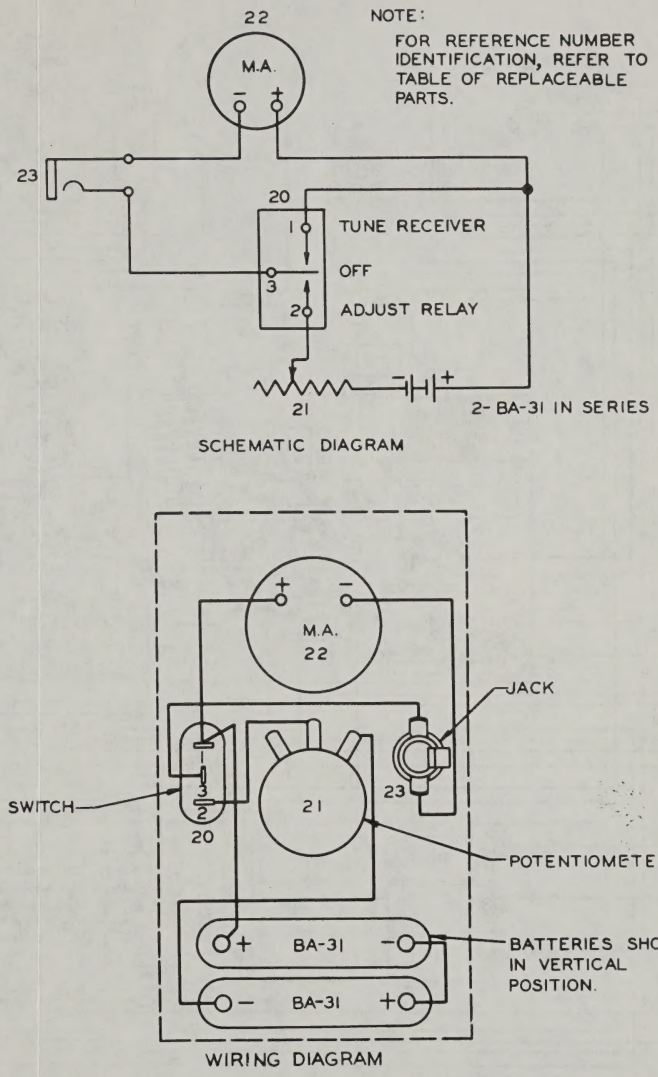
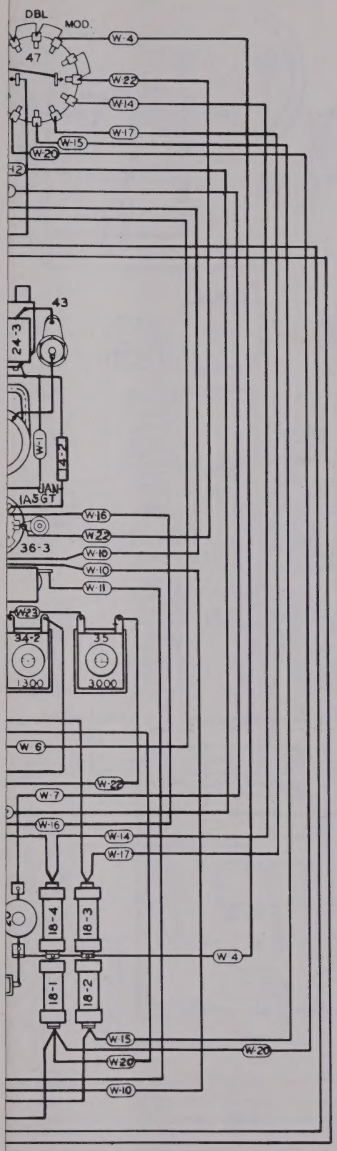


Figure 7-6. Test Indicator BE-67—Schematic and Wiring Diagram



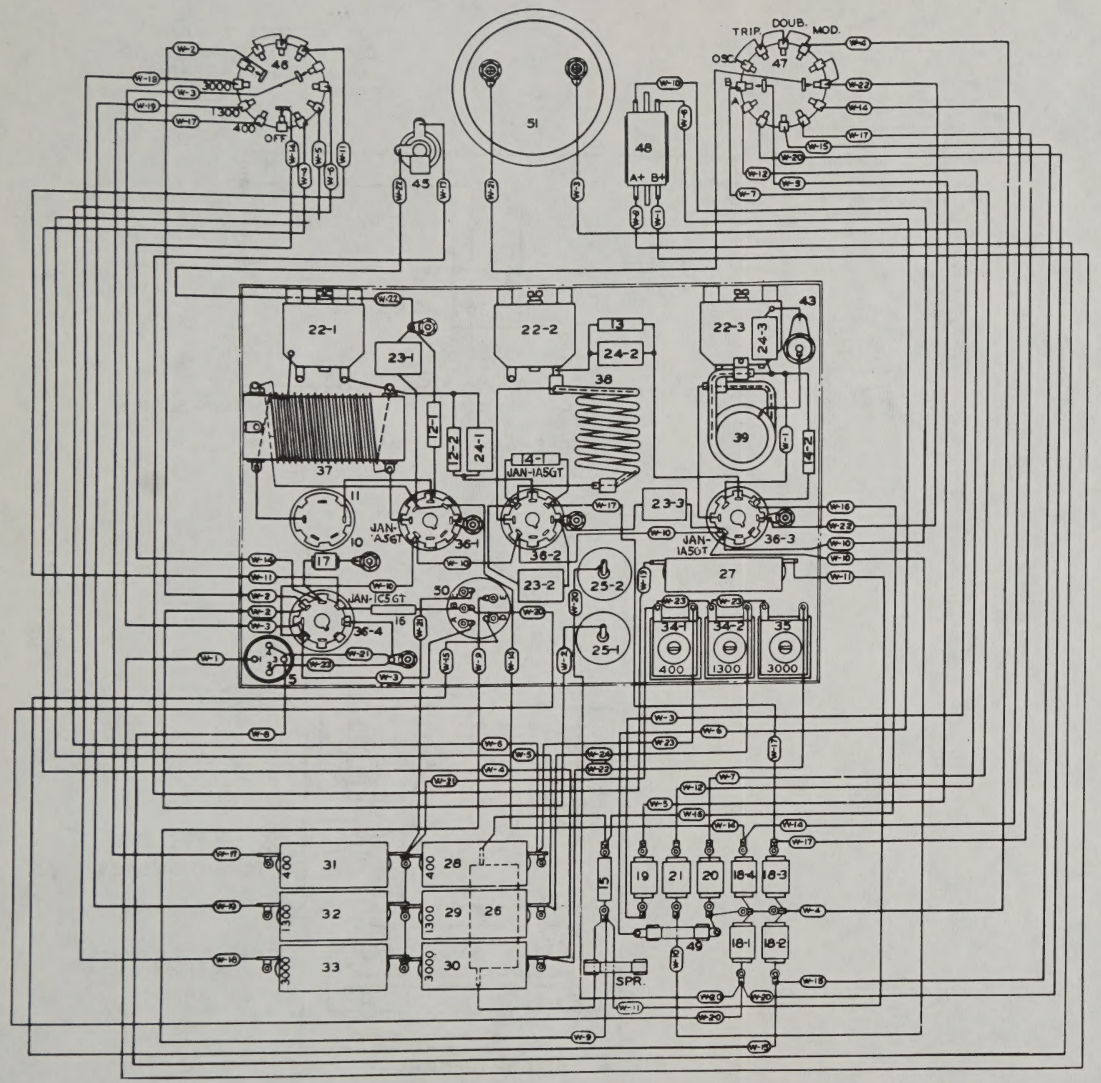
WIRE TABLE	
CODE	COLOR OF WIRE
W-1	RED
W-2	RED-YELLOW
W-3	YELLOW-GREEN
W-4	RED-BLUE
W-5	ORANGE
W-6	RED-GREEN
W-7	RED-WHITE
W-8	YELLOW
W-9	YELLOW-BLUE
W-10	YELLOW-GREEN
W-11	YELLOW-BROWN
W-12	YELLOW-RED
W-13	YELLOW-BLACK
W-14	BLUE-WHITE
W-15	BLUE RED
W-16	BLUE-ORANGE
W-17	BLUE
W-18	BLUE-BROWN
W-19	BLUE-YELLOW
W-20	BLUE-BLACK
W-21	BLACK-WHITE
W-22	BLACK-BLUE
W-23	BLACK
W-24	BLACK-RED
W-25	RED-SLATE

NOTES -

1-FOR REFERENCE NUMBER IDENTIFICATION, REFER TO TABLE OF REPLACEABLE PARTS.

2-WIRES WITH NO COLOR CODE INDICATED ARE BARE OR SPAGHETTI COVERED.

Figure 7-8. Test Oscillator BC-376-B—Wiring Diagram

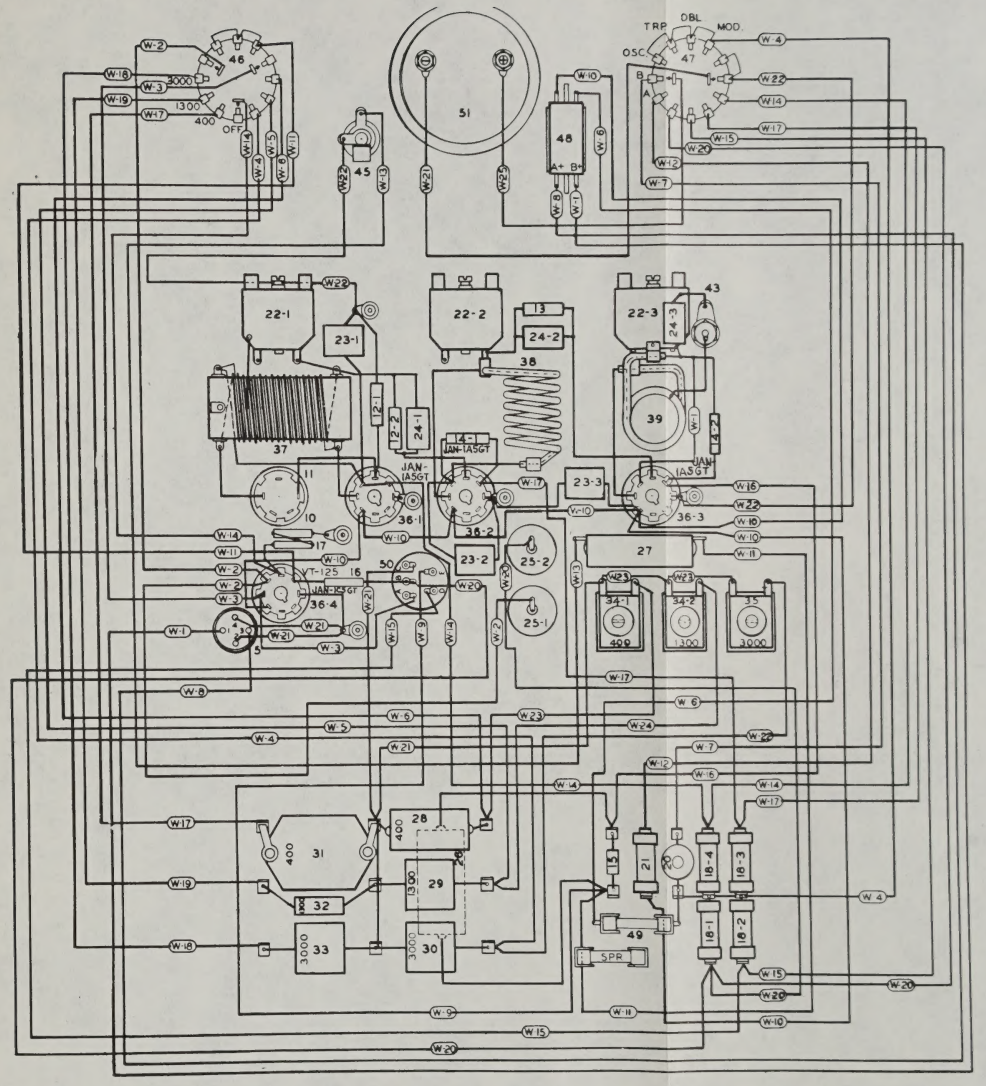


WIRE TABLE	
CODE	COLOR OF WIRE
W-1	RED
W-2	RED-YELLOW
W-3	RED-WHITE
W-4	RED-BLUE
W-5	RED-ORANGE
W-6	RED-GREEN
W-7	RED-BROWN
W-8	YELLOW
W-9	YELLOW-BLUE
W-10	YELLOW-GREEN
W-11	YELLOW-BROWN
W-12	YELLOW-RED
W-13	YELLOW-BLACK
W-14	BLUE-WHITE
W-15	BLUE-RED
W-16	BLUE-ORANGE
W-17	BLUE-GREEN
W-18	BLUE-BROWN
W-19	BLUE-YELLOW
W-20	BLUE-BLACK
W-21	BLACK-WHITE
W-22	BLACK-BLUE
W-23	BLACK-RED
W-24	BLACK-ORANGE

NOTES:-

1. FOR REFERENCE NUMBER IDENTIFICATION, REFER TO TABLE OF REPLACEABLE PARTS.
2. WIRES WITH NO COLOR CODE INDICATED ARE BARE OR SPAGHETTI COVERED.

Figure 7-7. Test Oscillator BC-376-A—Wiring Diagram

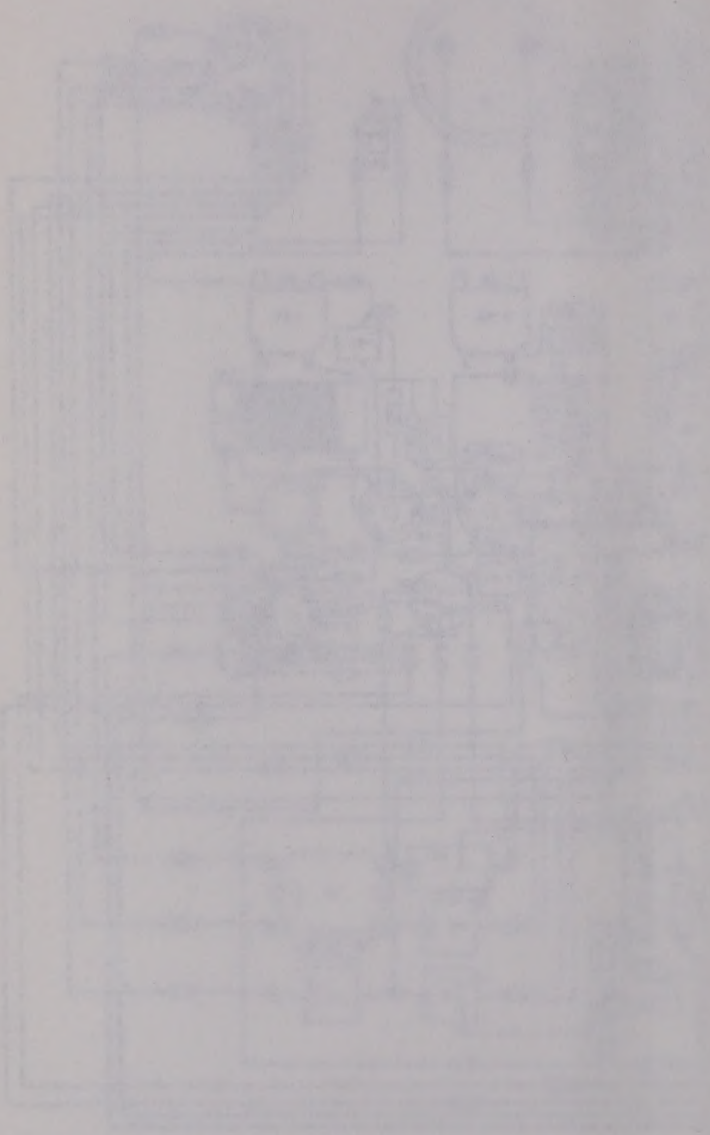


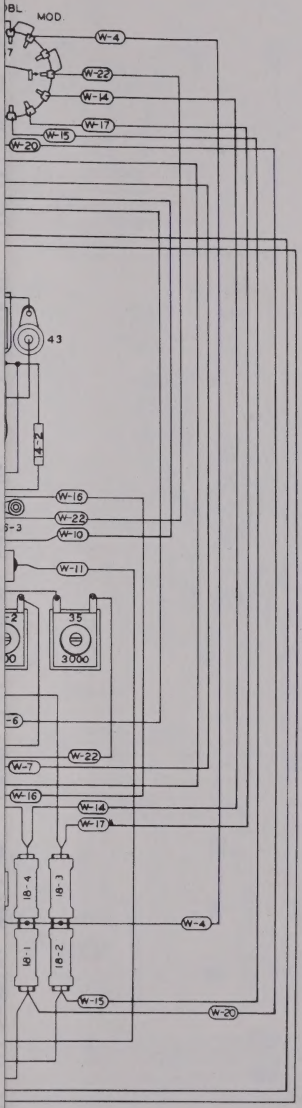
WIRE TABLE	
CODE	COLOR OF WIRE
W-1	RED
W-2	RED-YELLOW
W-3	YELLOW-GREEN
W-4	RED-BLUE
W-5	ORANGE
W-6	RED-GREEN
W-7	RED-WHITE
W-8	YELLOW
W-9	YELLOW-BLUE
W-10	YELLOW-GREEN
W-11	YELLOW-BROWN
W-12	YELLOW-RED
W-13	YELLOW-BLACK
W-14	BLUE-WHITE
W-15	BLUE-RED
W-16	BLUE-ORANGE
W-17	BLUE
W-18	BLUE-BROWN
W-19	BLUE-YELLOW
W-20	BLUE-BLACK
W-21	BLACK-WHITE
W-22	BLACK-BLUE
W-23	BLACK
W-24	BLACK-RED
W-25	RED-SLATE

NOTES -
1-FOR REFERENCE NUMBER IDENTIFICATION, REFER TO TABLE OF REPLACEABLE PARTS.

2-WIRES WITH NO COLOR CODE INDICATED ARE BARE OR SPAGHETTI COVERED.

Figure 7-8. Test Oscillator BC-376-B—Wiring Diagram



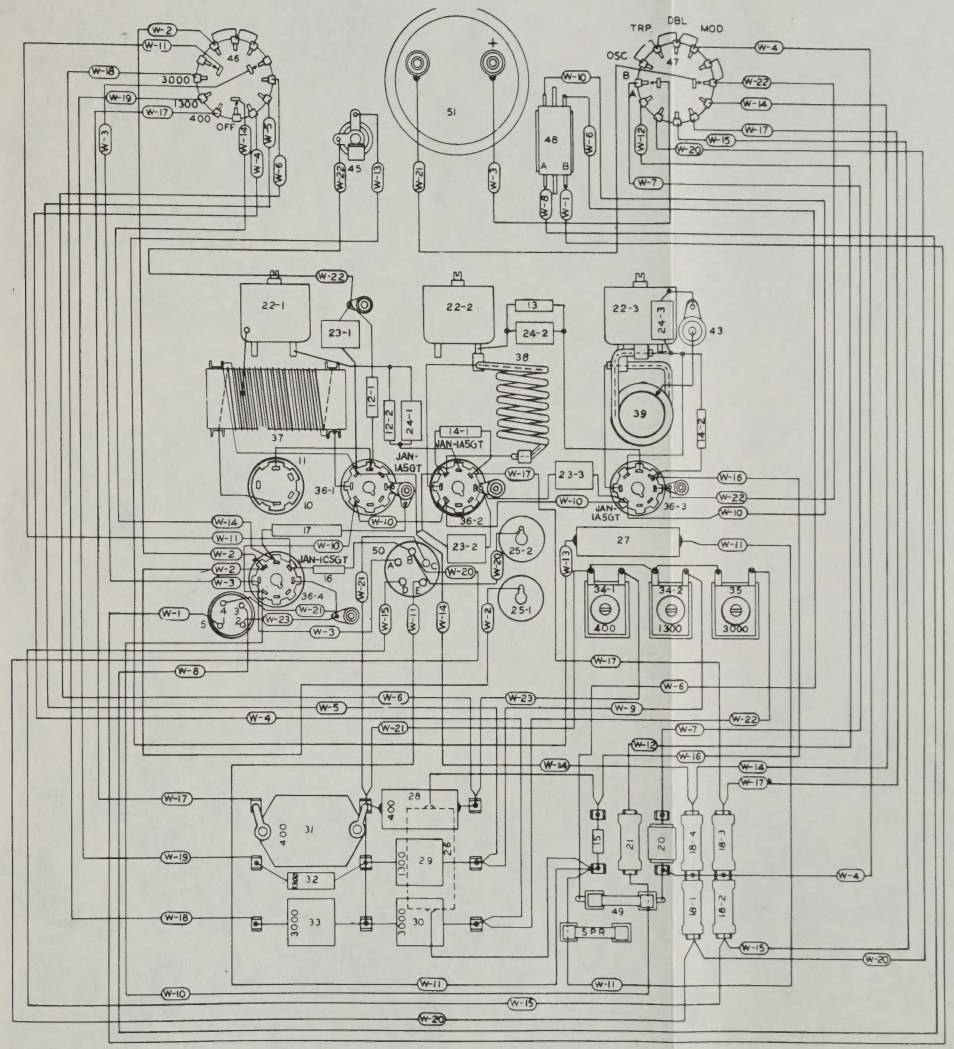


WIRE TABLE	
CODE	COLOR OF WIRE
W-1	RED
W-2	ORANGE
W-3	RED-WHITE
W-4	RED-BLUE
W-5	ORANGE-RED
W-6	RED-GREEN
W-7	ORANGE-GREEN
W-8	YELLOW
W-9	BLACK-ORANGE
W-10	BLACK
W-11	BROWN
W-12	BROWN-ORANGE
W-13	BROWN-WHITE
W-14	BLUE-WHITE
W-15	BLUE-RED
W-16	BLUE
W-17	GREEN-RED
W-18	GREEN-WHITE
W-19	GREEN-ORANGE
W-20	BLUE-BLACK
W-21	BLACK-WHITE
W-22	BLACK-GREEN
W-23	BLACK-RED

NOTES -
1-FOR REFERENCE NUMBER IDENTIFICATION, REFER TO TABLE OF REPLACEABLE PARTS.

2-WIRES WITH NO COLOR CODE INDICATED ARE BARE OR SPAGHETTI COVERED.

Test Oscillator BC-376-C and BC-376-D—Wiring Diagram

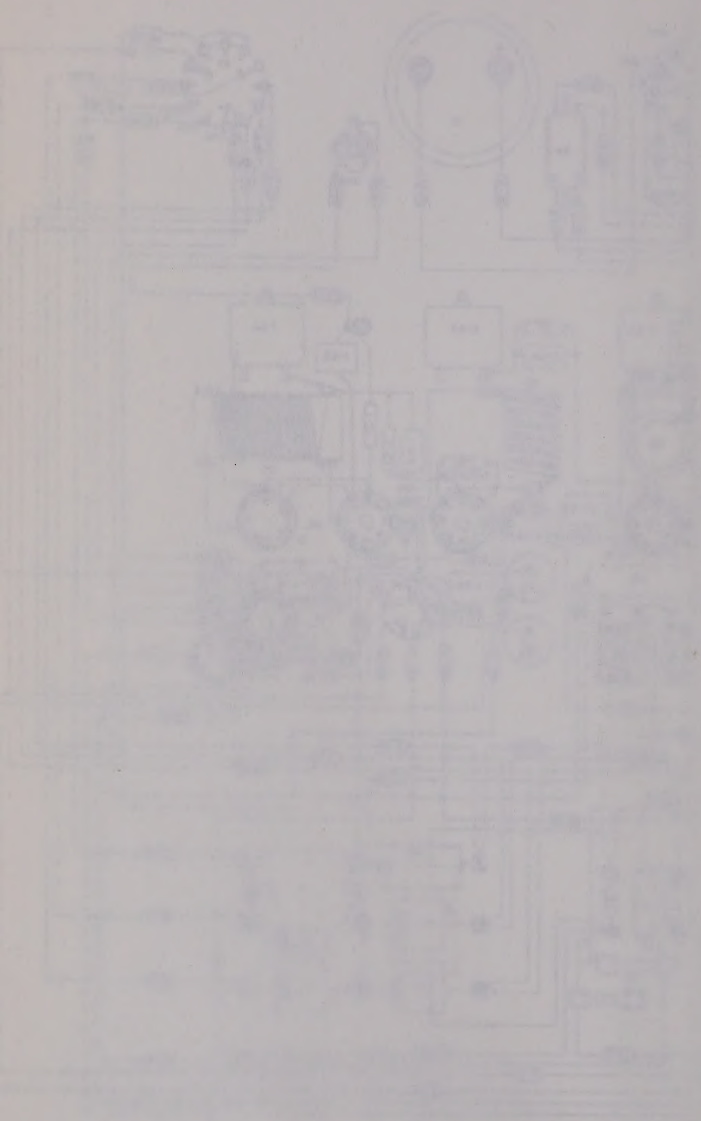


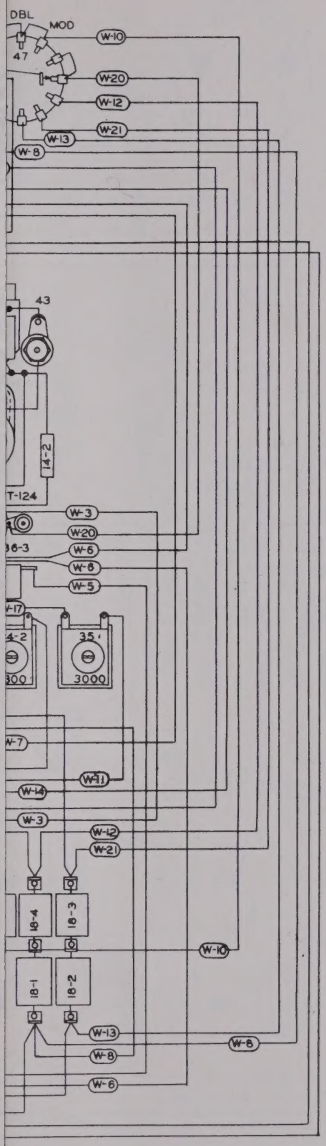
WIRE TABLE	
CODE	COLOR OF WIRE
W-1	RED
W-2	ORANGE
W-3	RED-WHITE
W-4	RED-BLUE
W-5	ORANGE-RED
W-6	RED-GREEN
W-7	ORANGE-GREEN
W-8	YELLOW
W-9	BLACK-ORANGE
W-10	BLACK
W-11	BROWN
W-12	BROWN-ORANGE
W-13	BROWN-WHITE
W-14	BLUE-WHITE
W-15	BLUE-RED
W-16	BLUE
W-17	GREEN-RED
W-18	GREEN-WHITE
W-19	GREEN-ORANGE
W-20	BLUE-BLACK
W-21	BLACK-WHITE
W-22	BLACK-GREEN
W-23	BLACK-RED

NOTES -
1-FOR REFERENCE NUMBER IDENTIFICATION, REFER TO TABLE OF REPLACEABLE PARTS.

2-WIRES WITH NO COLOR CODE INDICATED ARE BARE OR SPAGHETTI COVERED.

Figure 7-9. Test Oscillator BC-376-C and BC-376-D—Wiring Diagram



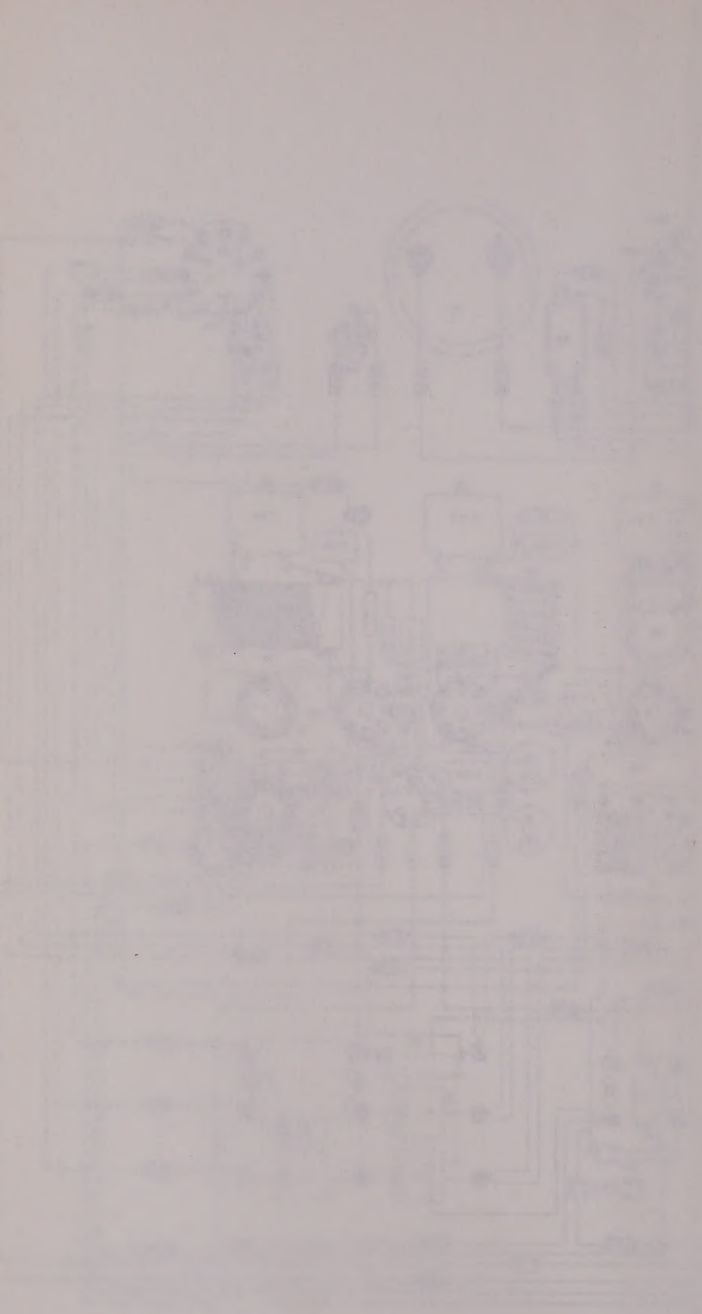


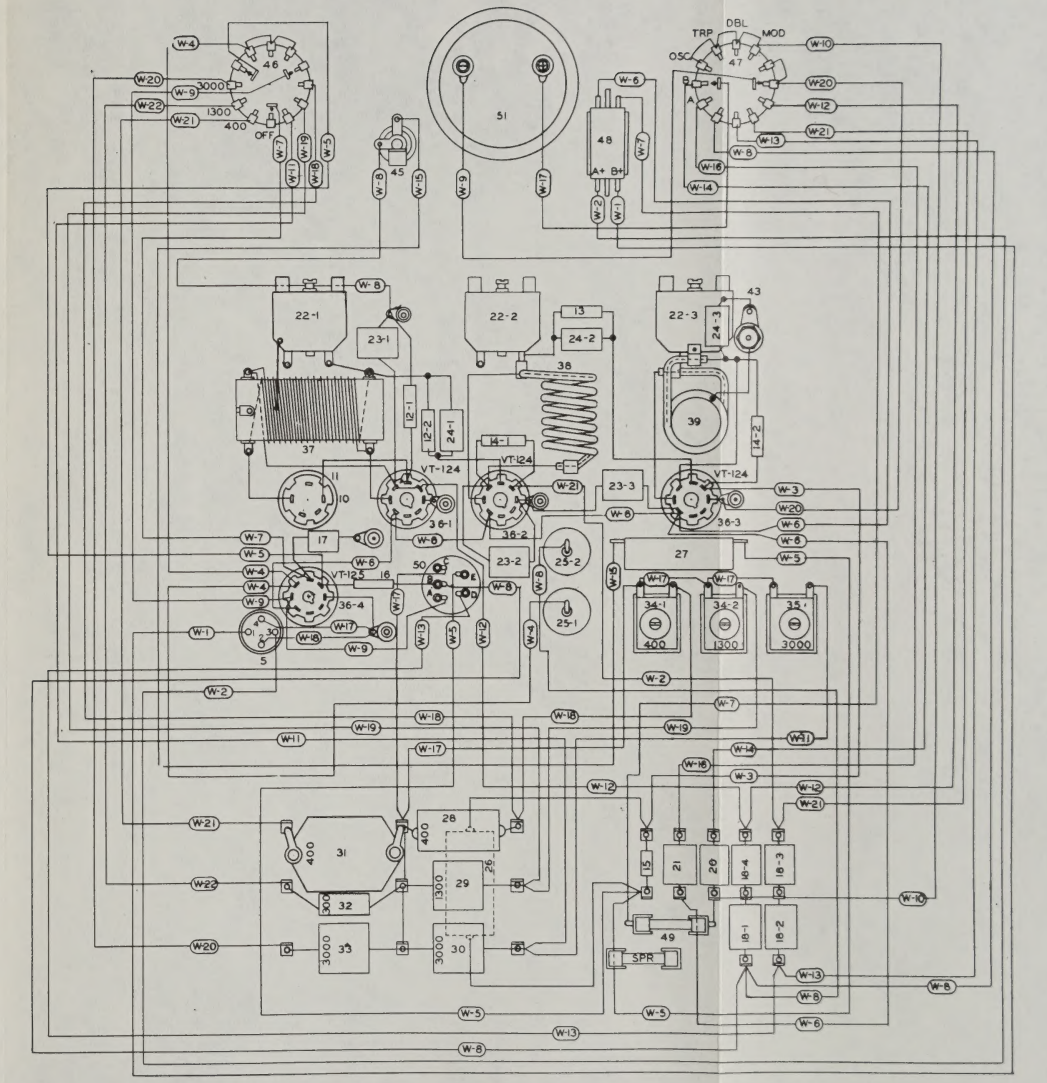
WIRE TABLE	
CODE	COLOR OF WIRE
W-1	RED
W-2	YELLOW
W-3	BLUE
W-4	ORANGE
W-5	BROWN
W-6	BLACK
W-7	GREEN
W-8	SLATE
W-9	RED-WHITE
W-10	RED-BLUE
W-11	RED-GREEN
W-12	BLUE-WHITE
W-13	BLUE-RED
W-14	ORANGE-GREEN
W-15	BROWN-WHITE
W-16	BROWN-ORANGE
W-17	BLACK-WHITE
W-18	BLACK-RED
W-19	BLACK-ORANGE
W-20	GREEN-WHITE
W-21	GREEN-RED
W-22	GREEN-ORANGE

NOTES:
1- FOR REFERENCE NUMBER IDENTIFICATION REFER TO TABLE OF REPLACEABLE PARTS.

2- WIRES WITH NO COLOR CODE INDICATED ARE BARE OR SPAGHETTI COVERED.

Figure 7-10. Test Oscillator BC-376-E—Wiring Diagram



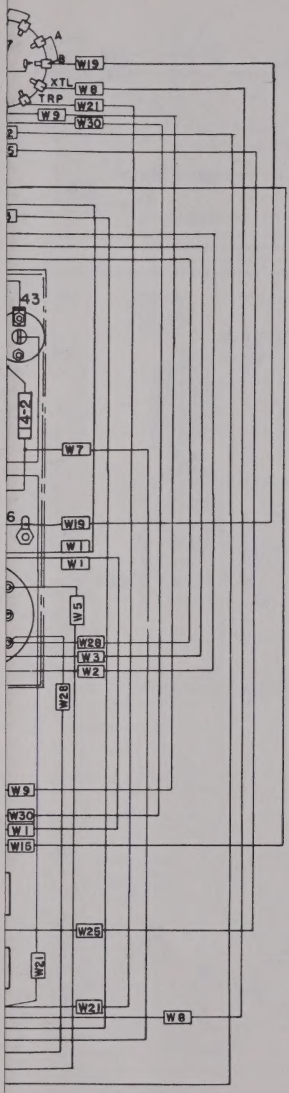


WIRE TABLE	
CODE	COLOR OF WIRE
W-1	RED
W-2	YELLOW
W-3	BLUE
W-4	ORANGE
W-5	BROWN
W-6	BLACK
W-7	GREEN
W-8	SLATE
W-9	RED-WHITE
W-10	RED-BLUE
W-11	RED-GREEN
W-12	BLUE-WHITE
W-13	BLUE-RED
W-14	ORANGE-GREEN
W-15	BROWN-WHITE
W-16	BROWN-ORANGE
W-17	BLACK-WHITE
W-18	BLACK-RED
W-19	BLACK-ORANGE
W-20	GREEN-WHITE
W-21	GREEN-RED
W-22	GREEN-ORANGE

NOTES:
1- FOR REFERENCE NUMBER IDENTIFICATION REFER TO TABLE OF REPLACEABLE PARTS.

2- WIRES WITH NO COLOR CODE INDICATED ARE BARE OR SPAGHETTI COVERED.

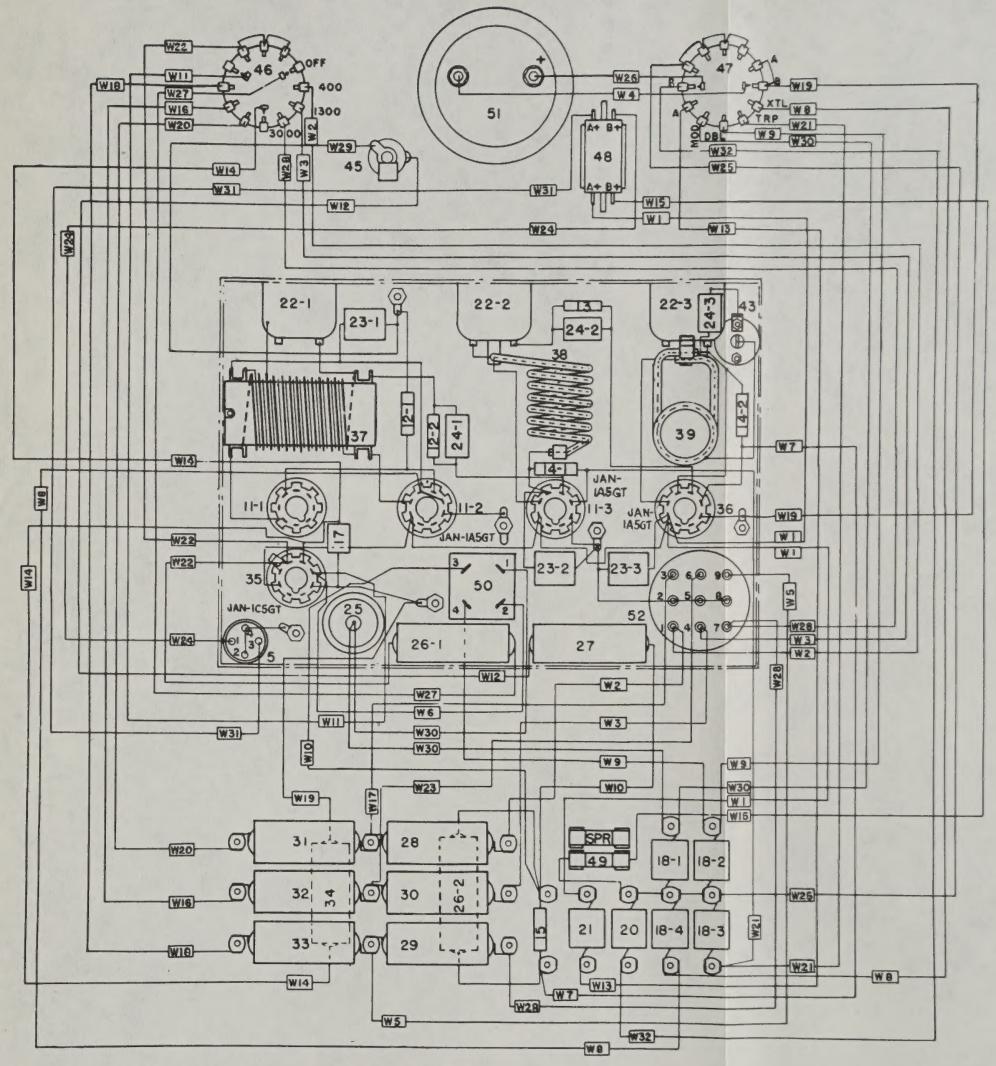
Figure 7-10. Test Oscillator BC-376-E—Wiring Diagram



WIRE TABLE	
CODE	COLOR OF WIRE
W 1	BLACK
W 2	BLACK-RED
W 3	BLACK-ORANGE
W 4	BLACK-WHITE
W 5	BLACK-WHITE
W 6	BLUE
W 7	BLUE
W 8	BLUE-WHITE
W 9	BLUE-RED
W 10	BROWN
W 11	BROWN
W 12	BROWN-WHITE
W 13	BROWN-ORANGE
W 14	GREEN
W 15	GREEN
W 16	GREEN-YELLOW
W 17	GREEN-YELLOW
W 18	GREEN-WHITE
W 19	GREEN-WHITE
W 20	GREEN-RED
W 21	GREEN-RED
W 22	ORANGE
W 23	ORANGE
W 24	RED
W 25	RED-BLUE
W 26	RED-WHITE
W 27	RED-WHITE
W 28	RED-GREEN
W 29	SLATE
W 30	SLATE
W 31	YELLOW
W 32	ORANGE-GREEN

NOTES:
1. FOR REFERENCE NUMBER IDENTIFICATION, REFER TO TABLE OF REPLACEABLE PARTS.
2. WIRES WITH NO COLOR CODE INDICATED ARE BARE OR SPAGHETTI COVERED.

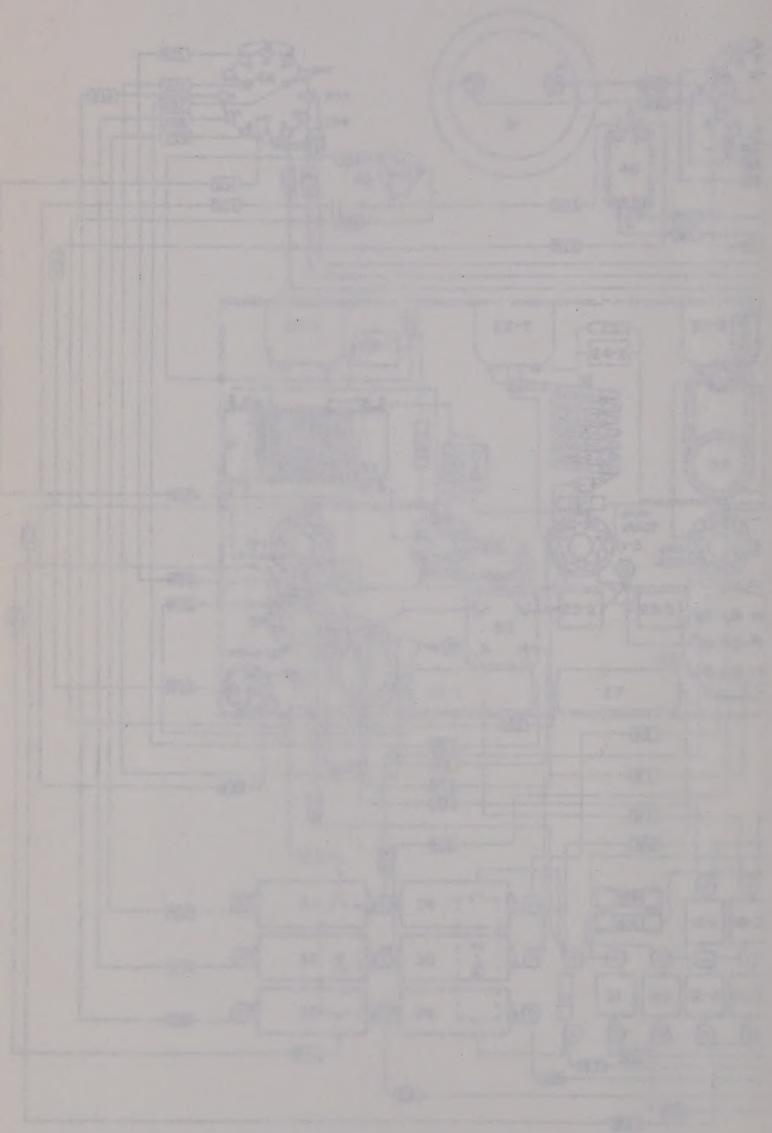
Figure 7-11. Test Oscillator BC-376-H—Wiring Diagram

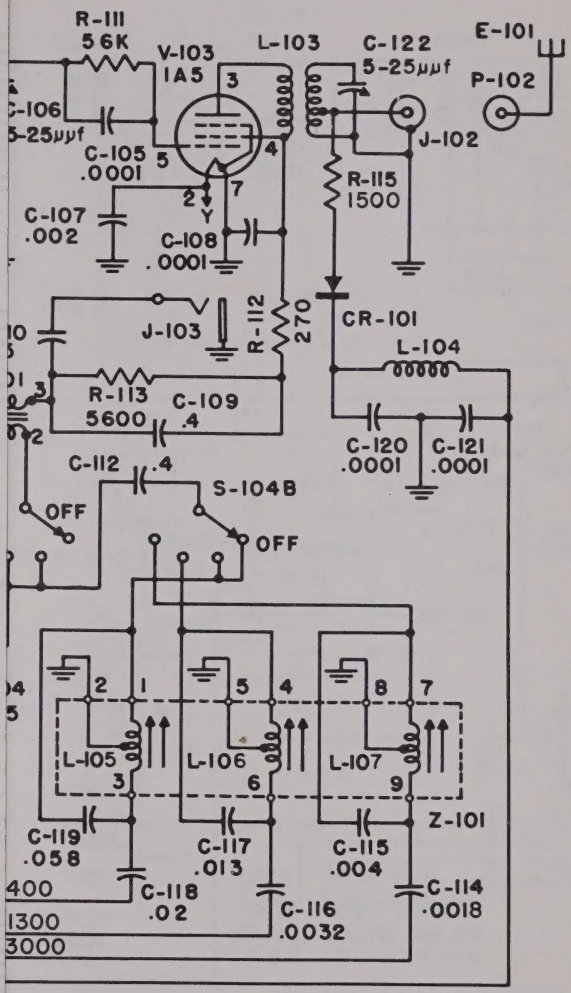


WIRE TABLE	
CODE	COLOR OF WIRE
W1	BLACK
W2	BLACK-RED
W3	BLACK-ORANGE
W4	BLACK-WHITE
W5	BLACK-WHITE
W6	BLUE
W7	BLUE
W8	BLUE-WHITE
W9	BLUE-RED
W10	BROWN
W11	BROWN
W12	BROWN-WHITE
W13	BROWN-ORANGE
W14	GREEN
W15	GREEN
W16	GREEN-YELLOW
W17	GREEN-YELLOW
W18	GREEN-WHITE
W19	GREEN-WHITE
W20	GREEN-RED
W21	GREEN-RED
W22	ORANGE
W23	ORANGE
W24	RED
W25	RED-BLUE
W26	RED-WHITE
W27	RED-WHITE
W28	RED-GREEN
W29	SLATE
W30	SLATE
W31	YELLOW
W32	ORANGE-GREEN

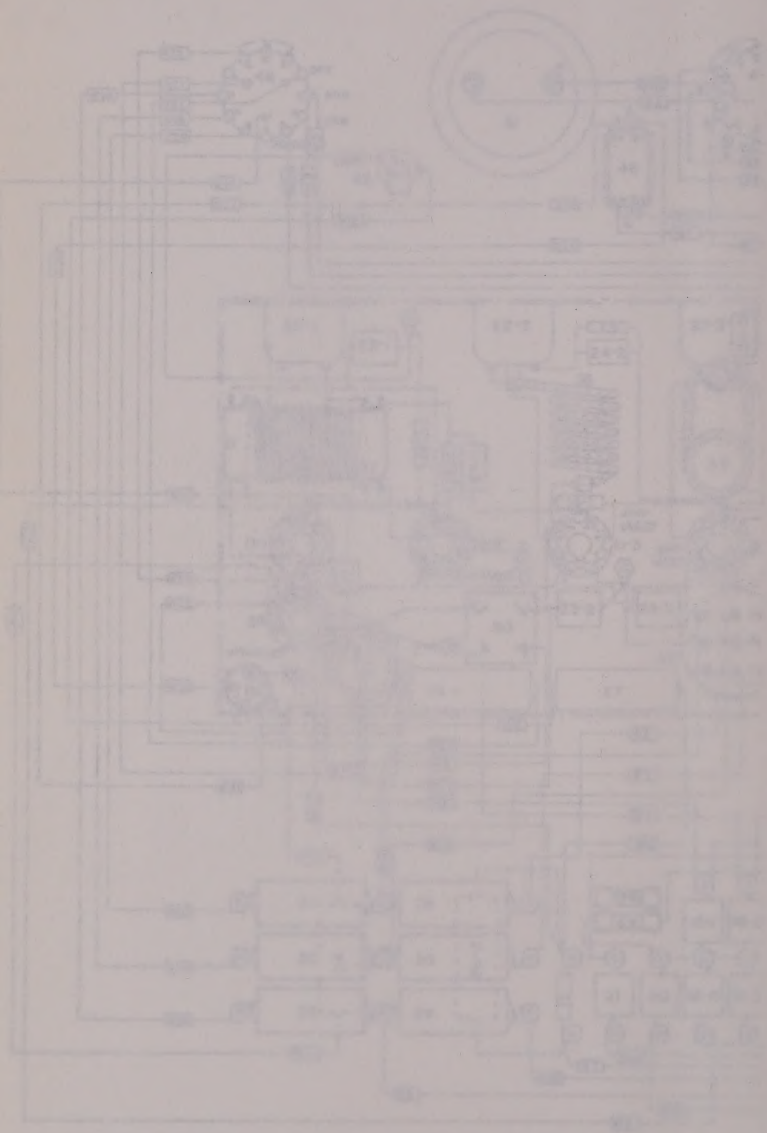
NOTES:
1. FOR REFERENCE NUMBER IDENTIFICATION, REFER TO TABLE OF REPLACEABLE PARTS.
2. WIRES WITH NO COLOR CODE INDICATED ARE BARE OR SPAGHETTI COVERED.

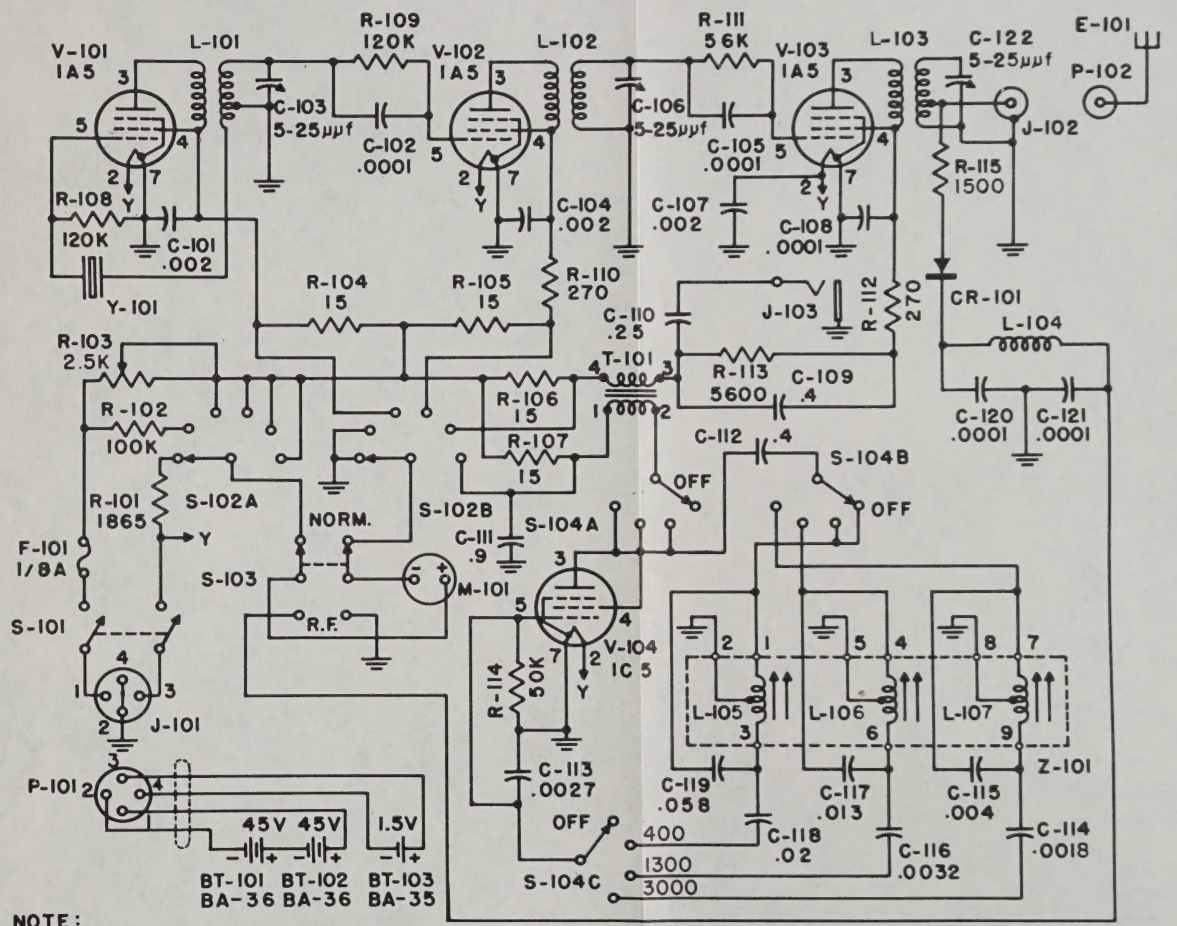
Figure 7-11. Test Oscillator BC-376-H—Wiring Diagram





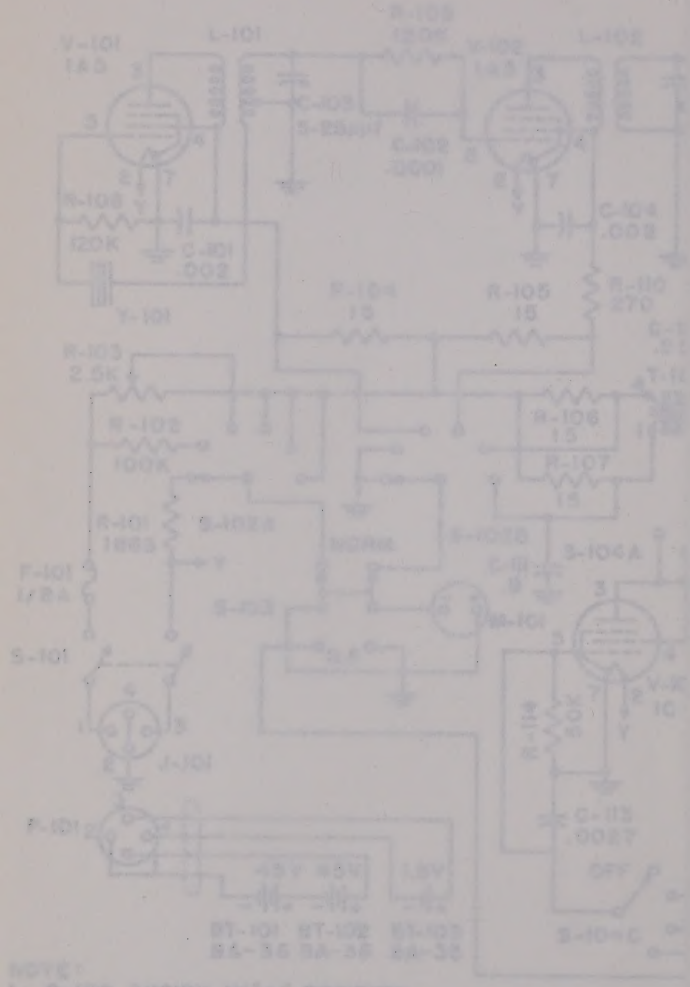
7-15. Test Oscillator BC-376-K—Schematic Diagram





NOTE:
1: S-102 SHOWN IN "A" POSITION.
2: UNLESS OTHERWISE INDICATED ALL RESISTORS ARE IN OHMS & ALL CAPACITORS ARE IN MICROFARADS.

Figure 7-15. Test Oscillator BC-376-K—Schematic Diagram



NOTE:
1. S-102 SHOWN IN "A" POSITION.
2. UNLESS OTHERWISE INDICATED
   ALL RESISTORS ARE IN OHMS
3. ALL CAPACITORS ARE IN MICROFARADS.

Figure

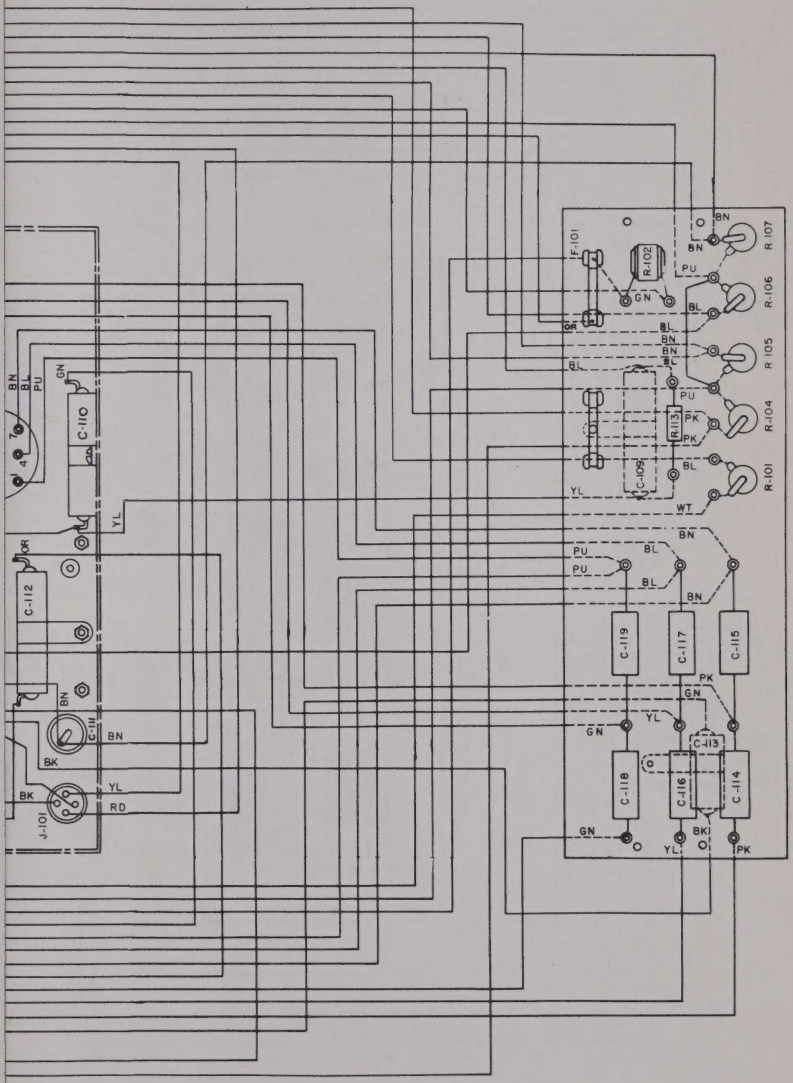
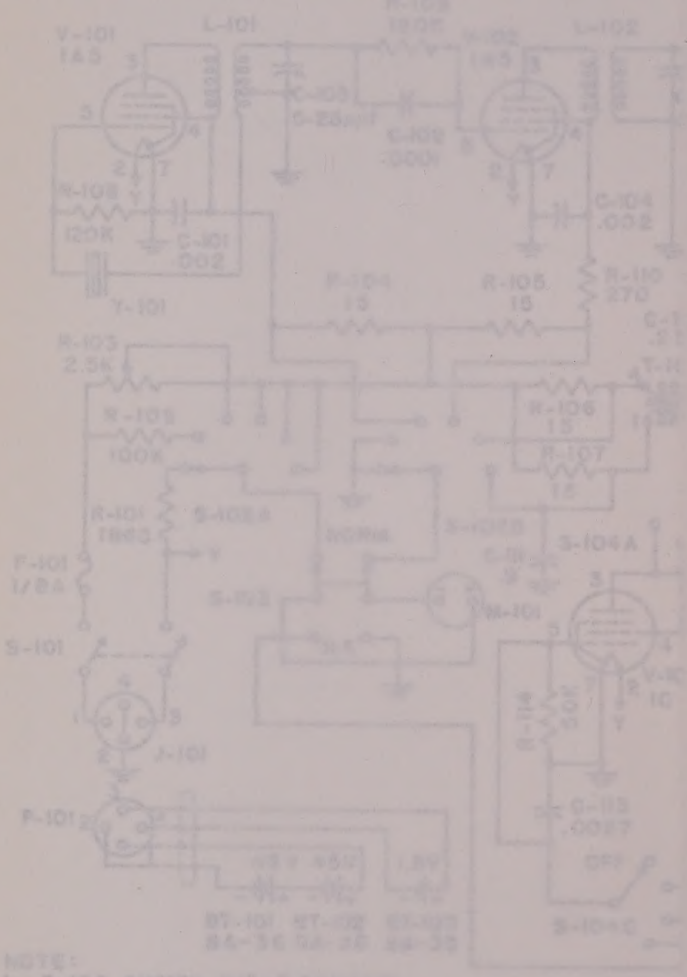


Figure 7-16. Test Oscillator BC-376-K—Wiring Diagram



NOTE:
1. S-102 SHOWN IN "A" POSITION.
2. UNLESS OTHERWISE INDICATED
   ALL RESISTORS ARE IN OHMS
   & ALL CAPACITORS ARE IN MICROFARADS.

Figure

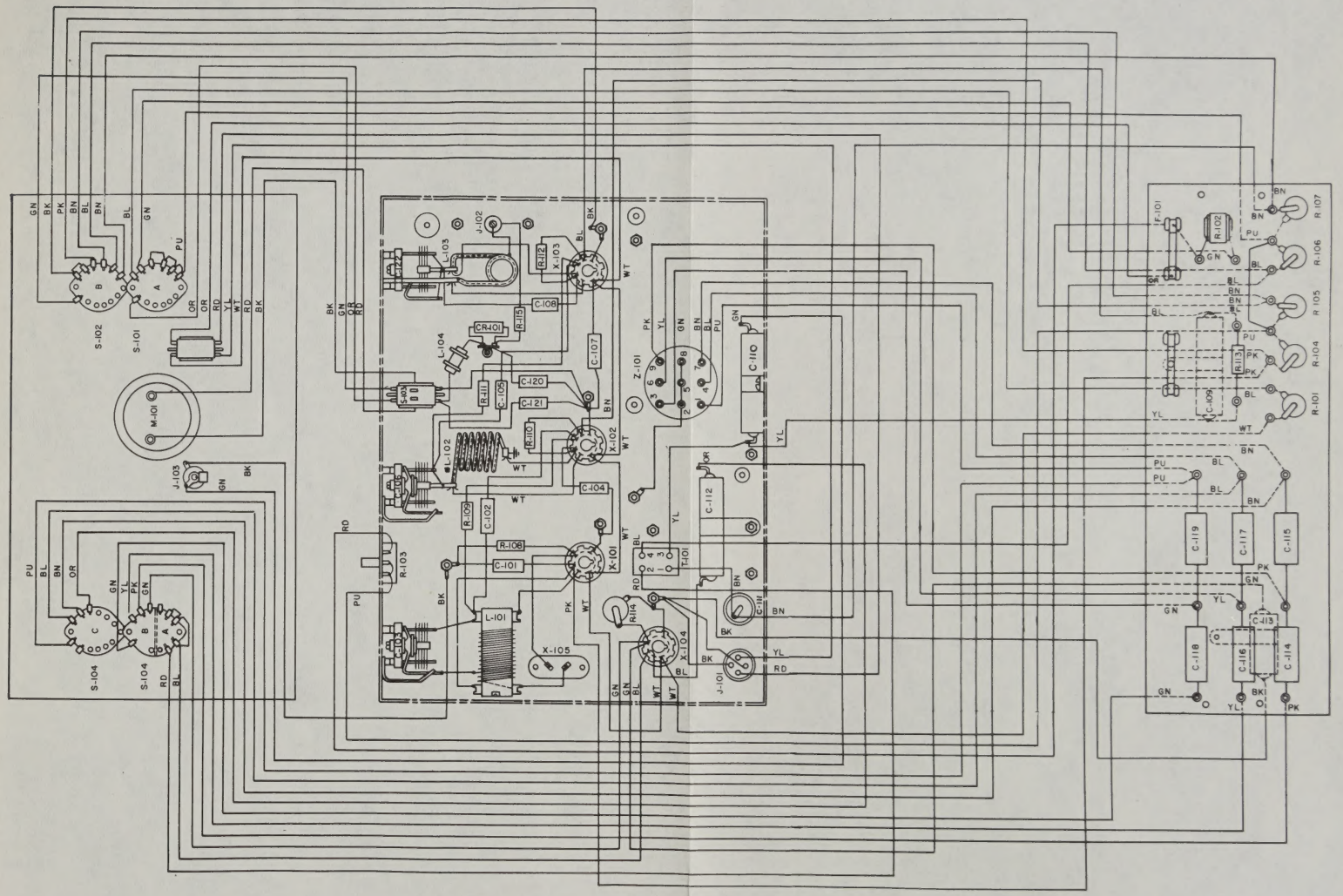
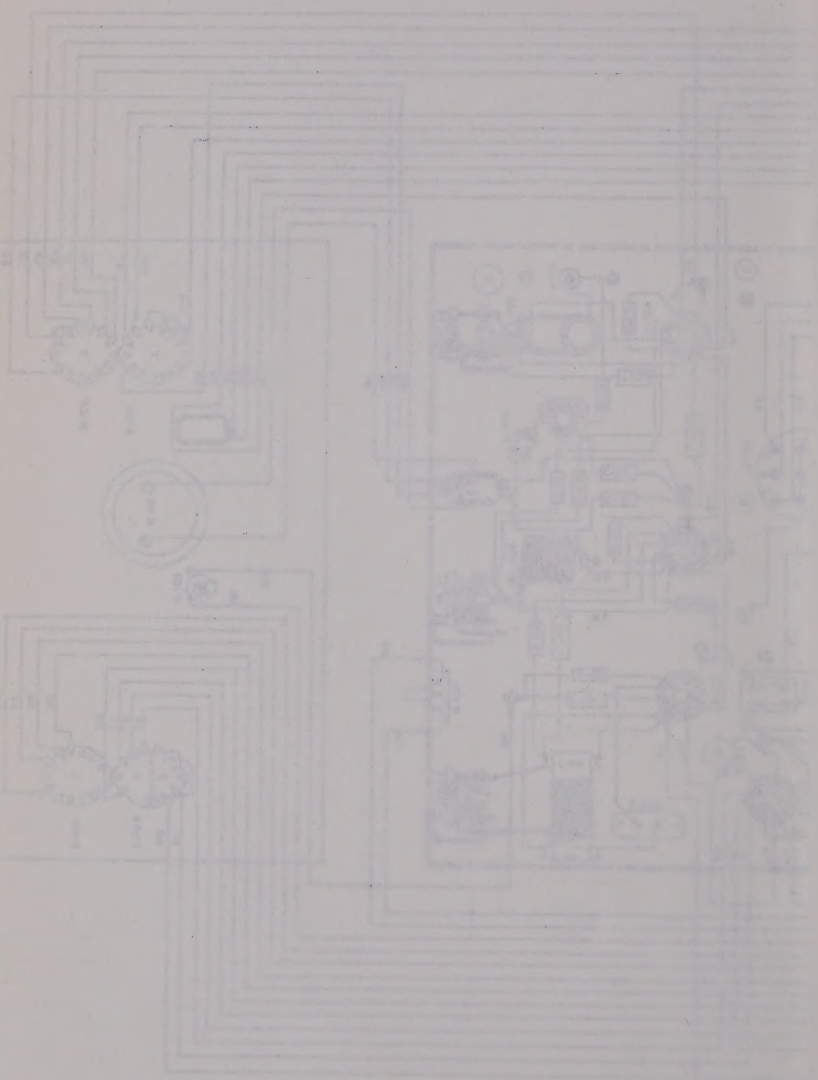
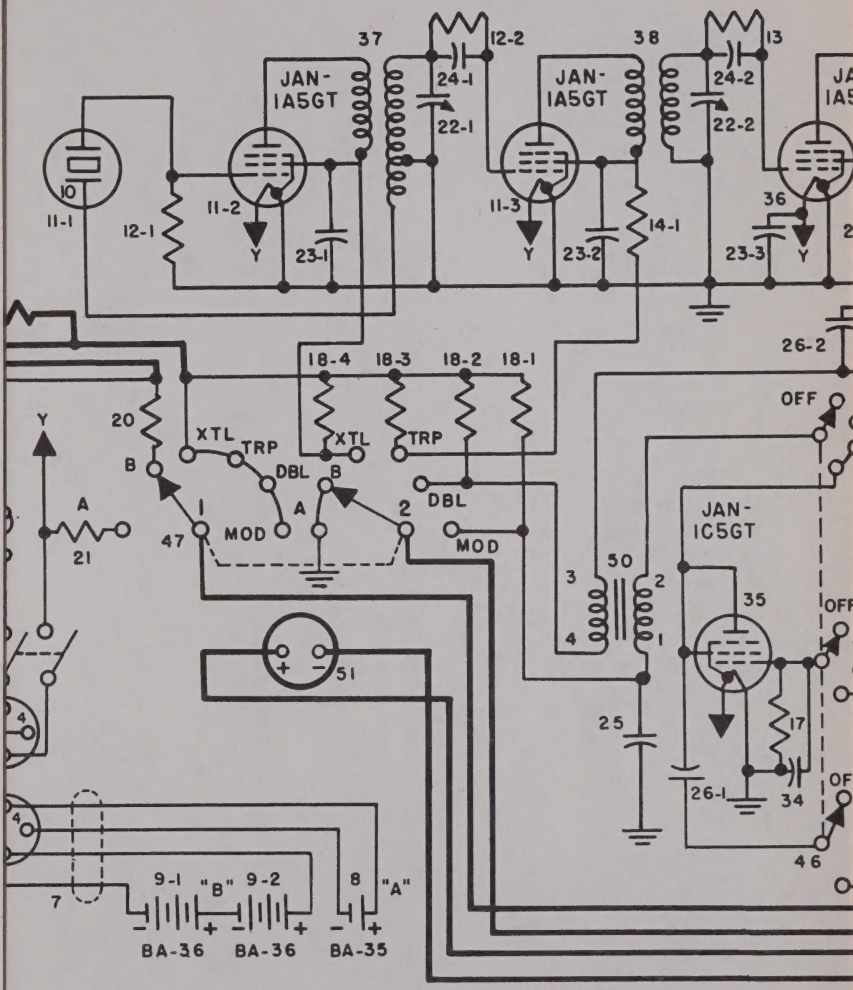
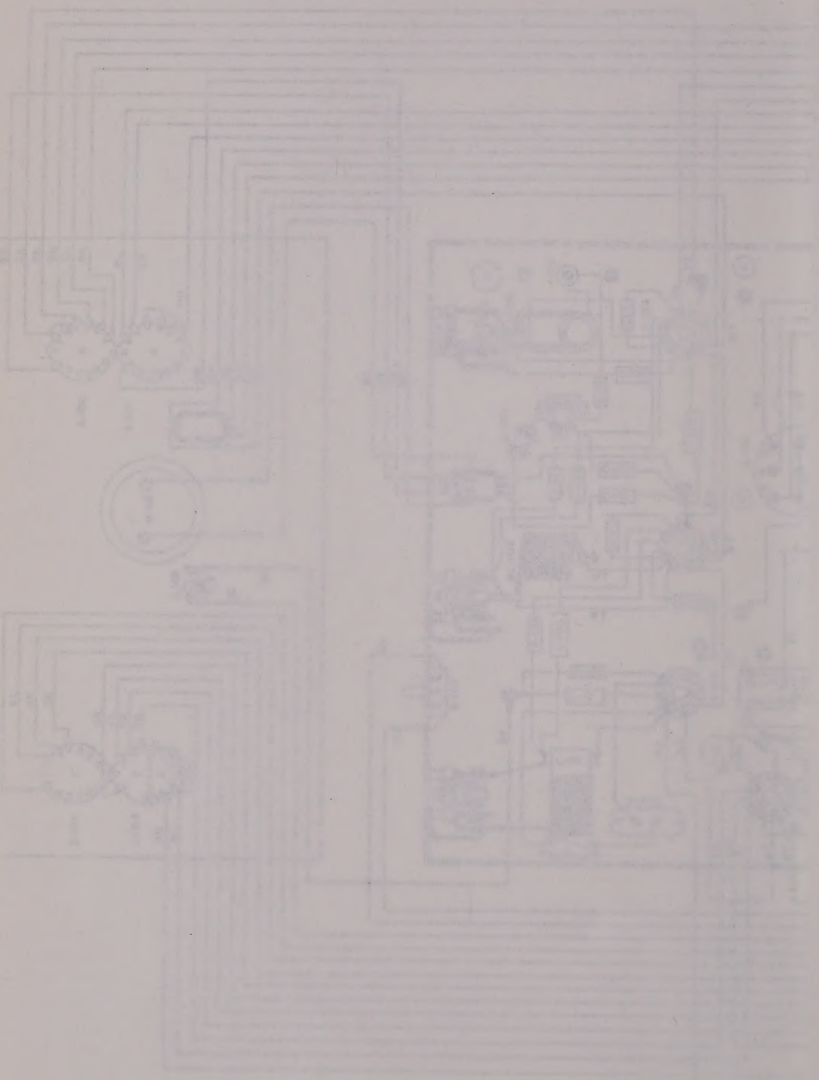


Figure 7-16. Test Oscillator BC-376-K—Wiring Diagram




JAN-1A5GT
JAN-1A5GT
JAN-1C5GT
37
38
12-2
13
24-1
24-2
22-1
22-2
11-1
12-1
11-2
11-3
23-1
23-2
14-1
23-3
36
26-2
18-4
18-3
18-2
18-1
20
XTL
TRP
DBL
MOD
21
47
51
50
35
25
26-1
17
34
OFF
46
9-1
"B"
9-2
8
"A"
7
BA-36
BA-36
BA-35



CIRCUIT CONSTANTS FOR TEST OSCILLATOR BC-376-H MODIFIED

1. B+ Battery Connection on Plug
2. B— Battery Connection on Plug
3. A+ Battery Connection on Plug
4. A— Battery Connection Plug
5. Battery Connector Plug (Male)
6. Battery Connector Plug (Female)
7. 24-Inch, 4-Wire Cable
8. 1.5-Volt Battery BA-35
9-1. 45-volt Battery BA-36
9-2. 45-Volt Battery BA-36
10. 12.5-Megacycle Quartz Crystal
11. 5-Prong Crystal Socket
12. Resistor, ½ watt, 100,000 ohms
13. Resistor, ½ watt, 50,000 ohms
14. Resistor, ½ watt, 250 ohms
15. Resistor, ½ watt, 5000 ohms
17. Resistor, 50,000 ohms
18. Resistor, 15 ohms
20. Resistor, 100,000 ohms
21. Resistor, 1865 ohms
22. Capacitor, Tuning, 25 Micromicrofarads
23. Capacitor, 0.002 Microfarads
24. Capacitor, 0.0001 Microfarads
25. Capacitor, 0.9 Microfarads
26. Capacitor, 0.4 Microfarads
27. Capacitor, 0.25 Microfarads
28. Capacitor, 0.058 Microfarads
29. Capacitor, 0.004 Microfarads
30. Capacitor, 0.013 Microfarads
31. Capacitor, 0.020 Microfarads
32. Capacitor, 0.0032 Microfarads
33. Capacitor, 0.0013 Microfarads
34. Capacitor, 0.0027 Microfarads
35. Socket, Bakelite
36. Socket, Ceramic
37. Inductance Coil, 12.5 Megacycle, Crystal Stage
38. Inductance Coil, 37.5 Megacycle, Tripler Stage
39. Inductance Coil, 75 Megacycle, Doubler Stage
40. Telescoping Radiator Antenna
41. Flexible Transmission Line
42. Transmission Line Plug (Male)
43. Transmission Line Plug (Female)
44. Radiator Socket
45. Headphone Jack
46. 3-Pole, 4-Position Switch
47. 2-Pole, 6-Position Switch
48. D.P.S.T. Switch
49. Fuse, ⅛ Ampere
50. Modulation Transformer
51. Meter (0-1 Milliampere)
52. Audio Frequency Coil Assembly
53. Resistor, 2200 ohm, ½ watt, composition ±10%
54. Crystal, 1N34, Sylvania
55. Capacitor, 100 uuf, mica, 500 v. ±10%
56. Capacitor, 100 uuf, mica, 500 v. ±10%
57. RF Choke, 50 uh, 33 ma
58. Switch, toggle, DPDT
59. Potentiometer, 2000 ohm, 1 watt, composition

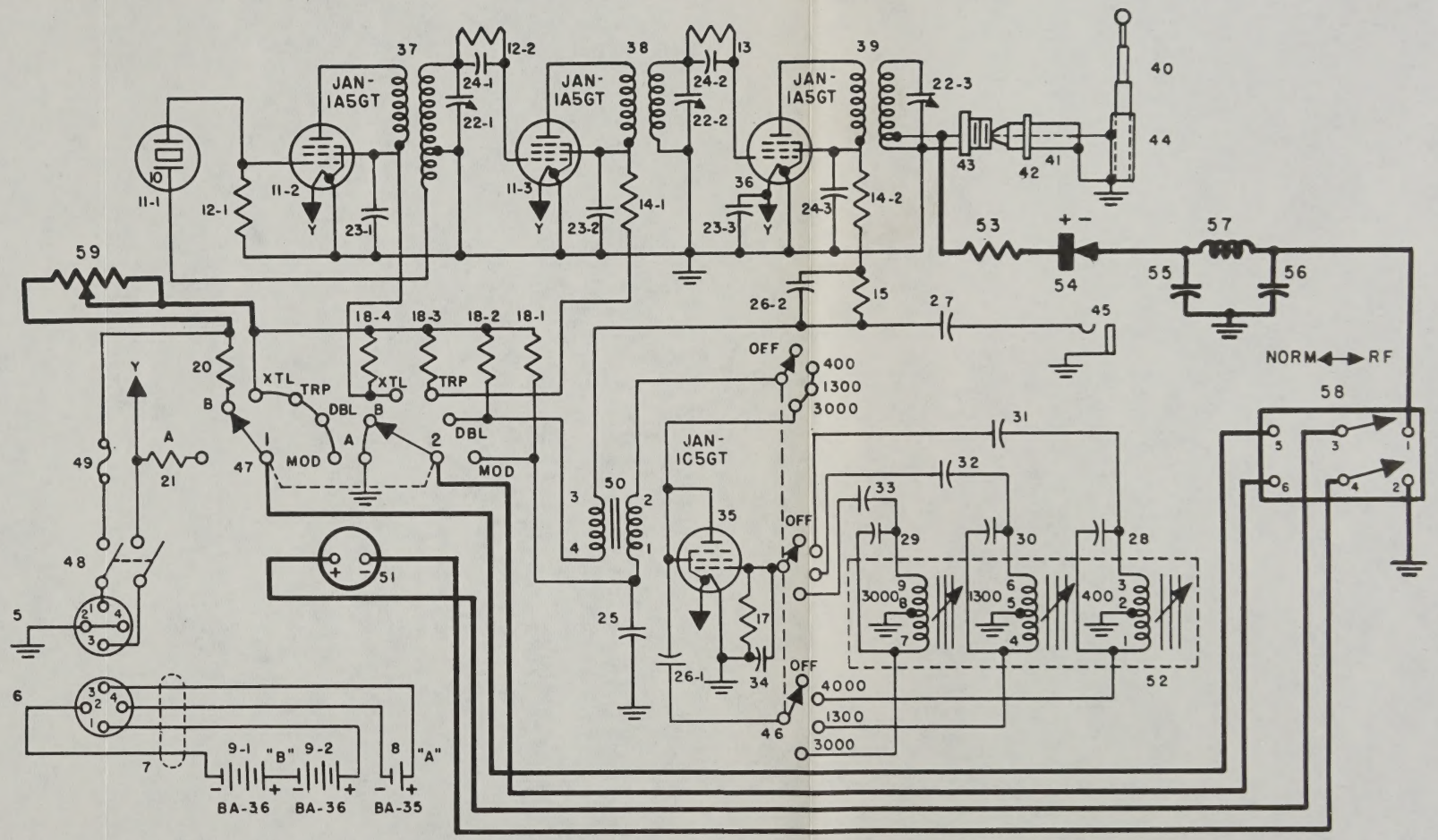


Figure 8-1—Test Oscillator BC-376-H—Schematic Diagram (Modified)

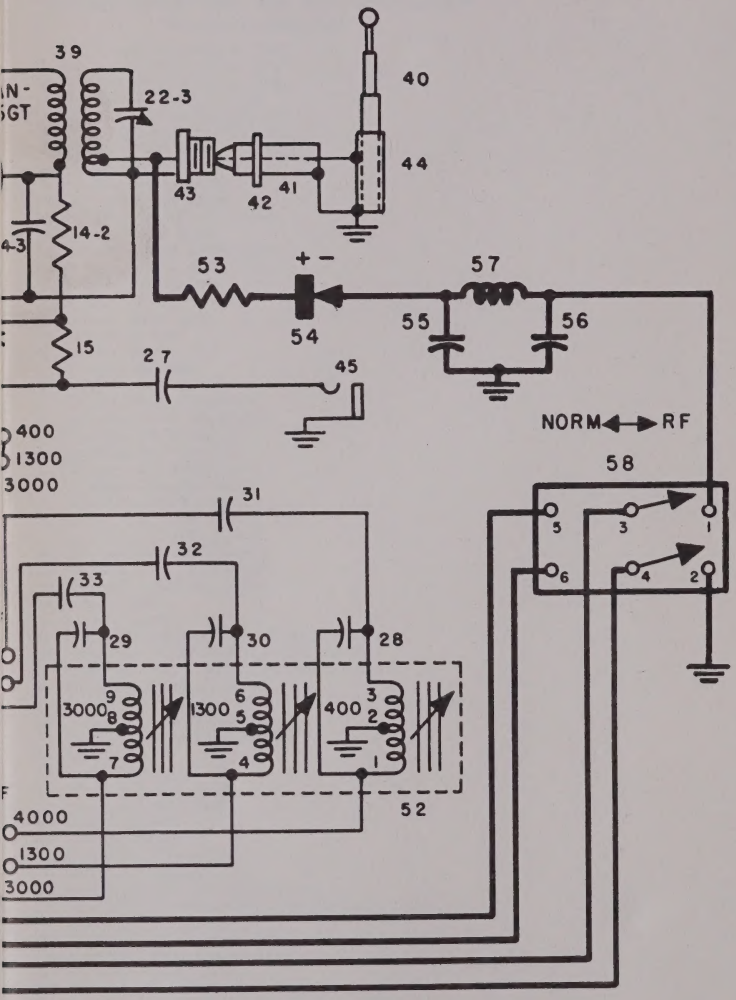


Figure 8-1—Test Oscillator BC-376-H—Schematic Diagram (Modified)

TM 11–6625–522–15—TEST SET I–76, TEST OSCILLATORS BC–376–A –B, –C, –D, –E, –F, –G, –H, AND –K AND TEST INDICATORS BE–67 –A, AND C—1962